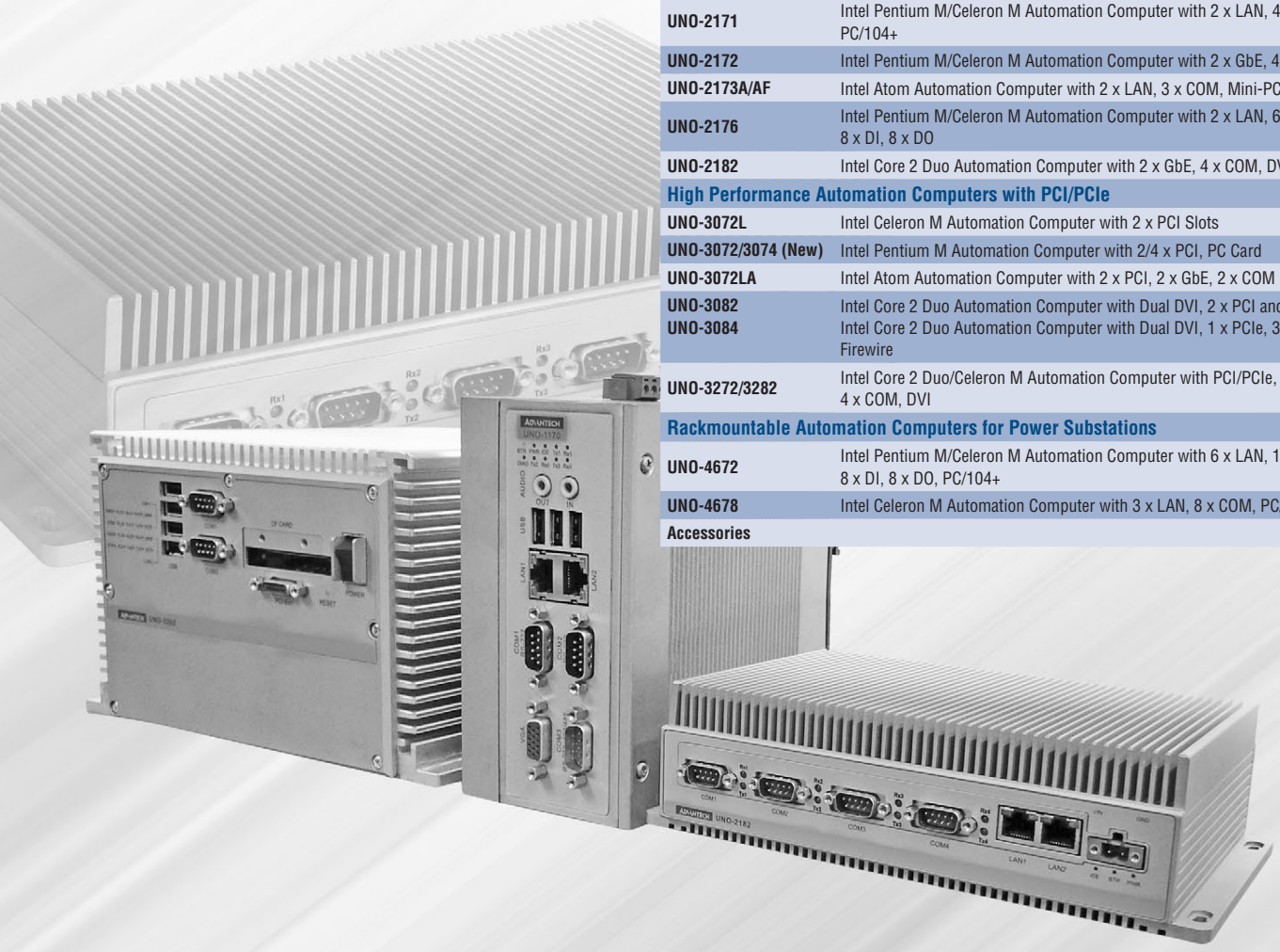
19 Embedded Automation Computers

Embedded Automation Computers Overview		*19-2*
Embedded OS Introduction and Driver Support		*19-3*
Embedded Automation Computer Selection Guide		*19-4*
DIN-rail PCs		
UNO-1019	Marvell XScale DIN-rail PC with 2 x LAN, 4 x COM, 2 x DI, 2 x DO	*19-8*
UNO-1140/F (New)	486SX-grade SoC DIN-rail PC with 1 x LAN, 8 x Isolated COM	*19-9*
UNO-1150/E **UNO-1150G/GE**	AMD Geode GX DIN-rail PC with 2 x LAN, 3 x COM, PCI-104 AMD Geode LX DIN-rail PC with 2 x LAN, 3 x COM, PCI-104	*19-10*
UNO-1170/E	Intel Pentium M/Celeron M DIN-rail PC with 2 x LAN, 3 x COM, 4 x USB, PC/104+	*19-11*
UNO-1171A/AE (New)	Intel Atom DIN-rail PC with 3 x LAN, 2 x COM, DVI-I, Mini-PCIe, PC/104+	*19-12*
Compact Automation Computers		
UNO-2050E	AMD Geode GX Automation Computer with 2 x LAN, 4 x COM, 8 x DI, 8 x DO	*19-13*
UNO-2053E	AMD Geode GX Automation Computer with 2 x LAN, 2 x COM, Audio, PC Card	*19-14*
UNO-2059E	AMD Geode GX Automation Computer with 4 x COM, LAN, PC Card	*19-15*
High Performance Automation Computers with PC/104		
UNO-2170	Intel Celeron M Automation Computer with 2 x LAN, 4 x COM, PC/104	*19-16*
UNO-2171	Intel Pentium M/Celeron M Automation Computer with 2 x LAN, 4 x COM, PC/104+	*19-17*
UNO-2172	Intel Pentium M/Celeron M Automation Computer with 2 x GbE, 4 x COM, DVI	*19-18*
UNO-2173A/AF	Intel Atom Automation Computer with 2 x LAN, 3 x COM, Mini-PCIe	*19-19*
UNO-2176	Intel Pentium M/Celeron M Automation Computer with 2 x LAN, 6 x COM, 8 x DI, 8 x DO	*19-20*
UNO-2182	Intel Core 2 Duo Automation Computer with 2 x GbE, 4 x COM, DVI	*19-21*
High Performance Automation Computers with PCI/PCIe		
UNO-3072L	Intel Celeron M Automation Computer with 2 x PCI Slots	*19-22*
UNO-3072/3074 (New)	Intel Pentium M Automation Computer with 2/4 x PCI, PC Card	*19-23*
UNO-3072LA	Intel Atom Automation Computer with 2 x PCI, 2 x GbE, 2 x COM	*19-24*
UNO-3082 **UNO-3084**	Intel Core 2 Duo Automation Computer with Dual DVI, 2 x PCI and Firewire Intel Core 2 Duo Automation Computer with Dual DVI, 1 x PCIe, 3 x PCI and Firewire	*19-25*
UNO-3272/3282	Intel Core 2 Duo/Celeron M Automation Computer with PCI/PCIe, 2 x GbE, 4 x COM, DVI	*19-26*
Rackmountable Automation Computers for Power Substations		
UNO-4672	Intel Pentium M/Celeron M Automation Computer with 6 x LAN, 10 x COM, 8 x DI, 8 x DO, PC/104+	*19-27*
UNO-4678	Intel Celeron M Automation Computer with 3 x LAN, 8 x COM, PC/104	*19-28*
Accessories		*19-29*



Embedded Automation Computers Overview

Introduction

Advantech's Embedded Automation Computers are designed to fulfill the needs of mission critical automation applications. Their embedded design, industrial automation features and advanced computer technology deliver robustness, reliability and flexibility to satisfy customers who are looking for a rugged & compact computing platform with an industrial design and built-in I/O for diverse automation applications.

Leveraging field-approved and worldwide accepted real-time OS technology, Advantech provides Windows CE, Windows XP Embedded and Embedded Linux ready solutions and supports several standard networking interfaces, such as Ethernet, RS-232/422/485, onboard I/O lines, PC cards, CANbus and more. Because of its open architecture, great expansion capability and reliable fanless, cable-less and diskless design, Advantech's Embedded Automation Computers are ideal platforms to implement diverse custom applications in power and energy, transportation, machine automation, factory automation, building automation, facility monitoring system, environment monitoring vertical markets.

Features

Fanless Design

Advantech's Embedded Automation Computers are robust computers without rotating parts, such as a CPU fan, system fan, power supply fan or HDD. This concept significantly increases reliability, extends MTTR, and extremely reduces maintenance efforts. Therefore, you don't need to worry about a CPU cooler or HDD failure issue anymore, even in dusty environments.

For applications that requires mass storage, we also provide dual HDD with built-in RAID 1 feature that ensures data well kept once one of HDDs is failed during operation.

No Internal Cabling

Unlike general Box PC designs where cables are used for wiring between connectors and CPU boards, connectors on Advantech's Embedded Automation Computers are soldered directly on the PCB. Therefore, there is no internal cabling inside the chassis. This makes Advantech's Embedded Automation Computers much more reliable than general Box PC's in harsh environments.

Energy Star

Advantech's Embedded Automation Computers have been certified by Energy Star, recognizing their extreme low power consumption and high energy utilization. To build a low-carbon society everyone needs to do their best.

Industrial-grade Power Design

Advantech's Embedded Automation Computers are designed to accept wide DC power input (ex. 9 ~ 36 V_{DC}) in factory floors. In addition, they also feature power reversal protection that prevents system damage when power inputs are reversed.

Grounding Isolation Between Chassis and System

By adapting the feedback of industrial field site, Advantech's Embedded Automation Computers provide an isolated ground between the system and field. This feature can increase the stability to the entire system structure and is also important for constructing larger systems.

Industrial-grade RS-232/422/485 Design

Advantech's Embedded Automation Computers provide professional serial communication ports. They not only have patented RS-485 auto-flow control technology, but also has the enhanced drivers under the embedded Windows system which provides better capabilities than traditional drivers and support any -baud-rate function for the Oxford UARTs.

Wide Operating Temperature Range

This series supports wide operating temperature up to 75° C through selecting low-voltage CPU and industrial-grade components as well as associated thermal design that meets critical industrial-grade applications.

Battery-backup Memory

To keep critical data alive when system power is lost, Advantech's Embedded Automation Computers is equipped with onboard battery-backup memory. Onboard battery supplies power to keep memory operating all the time. In addition, battery-backup memory can also acts as temporary runtime data buffer that helps reduce CF's access times dramatically.

Ready Embedded OS for Rapid Application Development

Advantech's Embedded Automation Computers provide an embedded operating system offering a preconfigured image with optimized onboard device drivers. These Automation Computers support the three most popular embedded operating systems: Microsoft Windows CE, Microsoft Windows XP Embedded and Embedded Linux. The embedded operating systems fulfill the toughest requirements of complete functionality and high reliability. This series quickly proves itself to be an application ready platform that will save time and energy in launching your projects.

Flexible Networking Options

Advantech's Embedded Automation Computers support diverse ways to connect to a network, including Ethernet, Wireless LAN and Modems. Their built-in Ethernet port provides high-speed networking capability up to 1 Gbps. The PCMCIA expansion with WLAN/3G/GPRS/GSM module offers you a mobile and scalable network without incurring additional cabling costs. And through their serial ports, industrial modems offer the most popular and easiest networking way thru PSTN.

Wide Form Factor Selections to Fit Application Environments

These Embedded Automation Computers provide different form factors to fulfill the requirements and scenario of different automation applications. Simply classification: UNO-2000 is for MES (Manufacturing Execution System)/Thin Client Markets; UNO-1000/3000 are for Machine Automation/ Facility Automation; UNO-4000 is for Power and Energy Markets.

IEC 61850-3 Certification for Power Substation Applications

Advantech UNO-4600 series are designed to be compliant with IEC 61850-3, which has been defined as an international hardware standard of communication network and system in power substations. In a modern power substation, this standard facilitates the management to a large number of devices and enables various devices to communicate with one another.

Embedded OS Introduction and Driver Support

Support Versatile Operation Systems

Advantech's Embedded Automation Computers not only supports the popular Windows operating system, but also provides embedded operating system solutions offering a pre-configured image with optimized onboard device drivers. Advantech's Embedded Automation Computers provides the following most popular embedded operating systems:

- Windows CE 5.0
- Windows CE 6.0 R2
- Windows XP Embedded
- Windows Embedded Standard (WES)
- Advantech Embedded Linux

These operating systems fulfill the toughest requirements of complete functionality, high reliability, minimized cost and low power consumption. These Embedded Automation Computers quickly prove themselves to be an application-ready platform that saves time and energy in launching projects.

Real-Time Windows CE Meets Time-critical Demands

Windows CE, published by Microsoft, is a robust, compact and highly efficient real-time operating system that quickly satisfies any customized high-performance embedded applications. It also provides enterprise-scale protection with demanding network security mechanisms, including Kerberos Security Protocol, Extensible Authentication Protocol, Secure Sockets Layer (SSL) and so on. Furthermore, Windows CE supports the latest stack network standard, IPv6 that provides more IP addresses than the previous standard, IPv4. Windows CE possesses robust core OS services and complete networking services to offer users an ideal embedded development platform.

WinCE Powered by Wonderware Offers Flexible HMI

WinCE 6.0 R2 version for UNO-Series meets Wonderware's HMI Software's system requirement. With the HMI software support, these computers can work as HMI or control nodes. With the provided VESA mounting kit they can be integrated with panel monitors, such as FPM series. With support for touchscreen controllers under WinCE, users can operate the systems through touch. Without the monitor, they can also be a control node for programmed control logic.

WES Provides Applications Compatible to Windows XP

Windows Embedded Standard (WES) is a new name of WinXPe which is a componentized version of Windows XP Professional. It is based on Windows XP Professional binaries and features the latest multimedia (Windows Media Player 11, DirectX 9.0c), browsing (Internet Explorer 7.0) technologies, security, Remote Desktop Protocol 6.0 and File Based Write Filter (EWF). You can seamlessly integrate specific applications into WES with minimum effort.

Open Source Embedded Linux Offers a Cost-effective Alternative

Embedded Linux is a famous, UNIX compatible, open source embedded operating system which ports the Linux kernel to a specific CPU and board installed into the embedded device. Advantech offers Embedded Linux installation CD for UNO-Series products and supports Fedora Core 8 and RedHat 9.0 kernels. In the Embedded Linux, it features read-only file system, real-time kernel, on-line update, X Windows, browsing (Dillo), PDF viewer (XPDF), FTP (GFTP), IPv6 and software management (RedHat Package Manager) in 128MB image size.

Driver Packages Provided for QNX and Popular Linux Distributions

Customers can install QNX and standard Linux distributions on UNO-Series Embedded Automation Computers and Advantech provides drivers for the following self-design hardware or IO:

- Serial COM ports with Oxford UART
- CAN port
- Watchdog Timer
- Battery-backup SRAM
- Digital IO ports

Following distributions and versions listed are the environments which the related binary drivers are available for quick installation:

- QNX 6.3.2, 6.4.1
- Debian 3.1r0, 4.0, 5.0
- Fedora Core 3, 4, 5, 6, 7, 8, 9
- Mandrake 10.1
- Mandriva 2006, 2008
- opensuse 10.3
- Redhat 9
- RHEL 4, 5
- SuSE 9.2, 9.3, 10.1, 10.3
- Ubuntu 6.06, 8.04, 8.04.3

If your distribution is not on the list, please contact us for further assistance.

Standard Windows Support up to Windows 7

Advantech's Embedded Automation Computer provide necessary drivers on the companion DVD for user to install popular Windows operating systems, such as Window 2000, Windows XP Pro, even the latest Windows 7. For the self-design hardware or IO, Advantech provides the WDM (Windows Driver Model) drivers which is the standard driver architecture of Windows. WDM drivers would work on the other new Windows system as long as WDM is supported.

Software Drivers & Utilities

Advantech's Embedded Automation Computers provide more value to automation users. By accumulating year's field-experience and collecting customer's feedback, we had developed several convenient and high-efficient driver/utility which would highly facilitate user to manage the Embedded Automation Computers product.

DiagAnywhere for Cluster Management

User usually needs to manage a cluster of UNO-Series units on the field site. Advantech DiagAnywhere provides the following functions for user to manage them easily:

- Remote monitoring, control, shutdown and wakeup
- Screen capture and recording
- File transferring

Every UNO-Series' Windows-based embedded system, such as WinCE, WES and WinXPe comes bundled with DiagAnywhere. Users only need one client-end utility installed on the PC or laptop then they can do the remote monitor and diagnosis easily.

Battery-Backup SRAM, Useful Buffer for Controller Application

In some controlling applications, users need quick and reliable buffers for data transferring. UNO-Series products provide the SRAM which is backed-up by the onboard battery. With the driver support, users can use SRAM easily just like a local drive. It can also be used as a quick buffer, not only with high read/write efficiency, but it also can reduce the accessing frequency of CompactFlash.

EWF/FBWF Utility Protects the System

In the provided WES and WinXPe image of UNO-Series, we provide a friendly utility which has clear interface to guide the user active/inactive the EWF (Enhanced Write Filter) and FBWF (File-Based Write Filter) functions step by step. EWF and FBWF are the features provided by Microsoft. They are used to protect the WES or WinXPe from damage. While these functions are active, the specified drive or folder would never been written, and everything would back to the original configuration after reboot. Empowered by the provided utility, user can utilizes the EWF/FBWF easily.

System Utilities for Status-Monitoring and Availability

User in industrial field usually has the requirement to monitor the system status. UNO-Series provides the LMsensor driver/utility for user to monitor the system parameters, such like the Temperature of CPU/Board and Voltage of system power source. Also, we provide the WDT (Watchdog Timer) driver/utility to increase the availability of the system. WDT would reset the system or send alarm while the system is stuck on some accident event. For both function, LMsensor and WDT, we also provide the APIs for user to integrate into his application.

Enhanced COM Port Driver Meets the Industrial Requirements

In the WinCE of UNO-Series, we developed enhanced COM port driver which has times efficiency than standard driver. It can not only increase the communication efficiency but also reduce the CPU loading. Another, the WDM driver of COM port with Oxford UART would support the function of any-baud-rate. Which means it can support any baud rate user want for some specific application and keep user from the trouble of data loss

Embedded Automation Computer Selection Guide

Model Name	UNO-1019	UNO-1140/1140F	UNO-1150/1150E	UNO-1150G/1150GE	UNO-1170/1170E
CPU	XScale PXA 255, 200 MHz	EVA-X4150 SoC 486SX grade, 150 MHz	GX2 400 MHz	LX800, 500 MHz	Celeron M 1.0 GHz Pentium M 1.4 GHz
Onboard RAM	64 MB SDRAM	64 MB Industrial grade SDRAM	256 MB DDR SDRAM Onboard	256 MB DDR SDRAM Onboard	512 MB/1 GB DDR SDRAM
Battery-Backup SRAM	-	-	-	-	512 KB
Display	-	VGA	VGA	VGA	VGA
Audio	-	-	Yes	Yes	Yes
Serial Ports	2 x RS-232, 2 x RS-232/422/485	UNO-1140: 4 x RS-232/485 UNO-1140F: 4 x Isolated RS-232/485, 4 x Isolated RS-485	1 x RS-232, 2 x RS-232/422/485	1 x RS-232, 2 x RS-232/422/485	2 x RS-232, 1 x RS-232/422/485
Ethernet Ports	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100Base-T
USB Ports	-	Two	Two	Two	Four (One internal)
PC Card Slots	-	-	-	-	-
Printer Ports	-	-	-	- (Pin-head reserved for project)	-
PC/104 Expansion	-	(Project reserved PC/104)	N/A (UNO-1150) / PCI-104 (UNO-1150E)	N/A (UNO-1150G) / PCI-104 (UNO-1150GE)	-
PCIe/PCI Expansion	-	-	(UNO-1150) / mini PCI (UNO-1150E)	(UNO-1150G) / mini PCI (UNO-1150GE)	-
Onboard I/O	2-ch DI, 2-ch DO	-	-	-	-
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
CompactFlash Slots	One external	One internal	One internal	One internal	One internal
2.5" HDD Expansion	-	-	No (UNO-1150) / Yes (UNO-1150E)	No (UNO-1150G) / Yes (UNO-1150GE)	No
Operating Systems	Windows CE 4.2 & 5.0	UNO-1140: WinCE, Linux, DOS UNO-1140F: WinCE, Linux	Windows XP Embedded, Windows CE 5.0/6.0, Windows 2000/XP, Linux	Windows XP Embedded, Windows CE 5.0/6.0, Windows XP, Linux	Windows XP Embedded, Windows CE 5.0/6.0, Windows 2000/XP, Linux
Mounting	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall
Anti-Vibration	-	5 G w/CF	2 G w/CF, 1 G w/HDD	5 G w/CF, 1 G w/HDD	2 G w/CF
Anti-Shock	-	50 G w/CF	20 G w/HDD, 50 G w/CF	20 G w/HDD, 50 G w/CF	50 G w/CF
Power Input Range	10 ~ 30 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}
Operating Temperature	0 ~ 70° C @ 5 ~ 85% RH	-20 ~ 75° C (-4 ~ 167° F)	-10 ~ 60° C (14 ~ 140° F)	-10 ~ 60° C (14 ~ 140° F)	-10 ~ 60° C (14 ~ 140° F)
Power Consumption Typical	8.5 W	10 W	15 W	15 W	24 W
Minimum Power Requirement	Min. 13 W	24 W, +24 V @ 1 A power input	24 W, +24 V @ 1 A power input	24 W, 24 V @ 1 A power input	48 W, +24 V @ 2 A power input
Dimensions (W x D x H)	46 x 162 x 126 mm (1.8" x 6.4" x 5")	71 x 155 x 140 mm (2.8" x 6.1" x 5.9")	81 x 155 x 140 mm (3.1" x 6.1" x 5.6") / 109 x 155 x 140 mm (4.3" x 6.1" x 5.6")	71 x 155 x 140 mm (2.8" x 6.1" x 5.6") / 97 x 155 x 140 mm (3.8" x 6.1" x 5.6")	85 x 155 x 140 mm (3.4" x 6.1" x 5.6")
Weight	0.4 kg	1 kg	1.6 kg / 2 kg	1.6 kg / 2 kg	1.6 kg / 2 kg
Page	19-8	19-9	19-10	19-10	19-11

UNO-1171A/1171AE	UNO-2050E	UNO-2053E	UNO-2059E	UNO-2170	UNO-2171
Atom 1.6 GHz (N270)	GX2 400 MHz	GX2 400 MHz	GX2 400 MHz	Celeron 600 MHz Celeron M 1.0 GHz	Celeron M 1.0 GHz Pentium M 1.4 GHz
1GB DDR2 SDRAM	256 MB DDR SDRAM			256 MB/512 MB DDR SDRAM	512 MB/1 GB DDR SDRAM
1MB	-			512 KB	512 KB
DVI-I	VGA				
Yes, 5.1 channel HD Audio	-	Yes	-	-	Yes
2 x RS-232/422/485 2 x RS-232 (pin header)	2 x RS-232 2 x Isolated RS-232/422/485	2 x RS-232	2 x RS-232/485 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	2 x RS-232, 2 x RS-232/422/485
2 x 10/100/1000 Base-T	2 x 10/100Base-T	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100Base-T
Four	-	Two	Two	Two	Two
-	-	One	One	One	One
-	-	-	-	One	-
N/A (UNO-1171A) / PC/104+ (UNO-1171AE)	-	-	-	PC/104	PC/104+
1xPCIe mini card	-	-	-	-	-
-	8-ch isolated DI 8-ch isolated DO	-	-	-	-
Yes	Yes				
One internal	One internal				Two internal
No (UNO-1171A) / Yes (UNO-1171AE)	Option			Yes	
"Windows XP Embedded, Windows CE 6.0 Windows XP, Windows 7 Linux"	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux				
DIN-rail/Wall	DIN-rail/Wall			Wall	
2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD			2 G w/CF, 0.5 G w/HDD	2 G w/CF, 1 G w/HDD
20 G w/HDD, 50 G w/CF	20 G w/CF @ DIN 50 G w/CF @ Wall/Panel			20 G w/HDD 50 G w/CF	20 G w/HDD 50 G w/CF
9 ~ 36 V_{DC}	9 ~ 36 V_{DC}		10 ~ 48 V_{DC}	9 ~ 36 V_{DC}	10 ~ 53 V_{DC}
-10 ~ 65° C (14 ~ 149° F)	-10 ~ 55° C (14 ~ 131° F)			-20 ~ 50° C (-4 ~ 122° F)	-20 ~ 65° C (-4 ~ 149° F)
15W	15 W			24 W	24 W
36 W, +24 V @ 1.5 A power input	24 W, +24 V @ 1 A power input			48 W, +24 V @ 2 A power input	48 W, +24 V @ 2 A power input
"85 x 155 x 140 mm / 111 x 155 x 140 mm (3.4"" x 6.1"" x 5.6"") / (4.4"" x 6.1"" x 5.6"")"	188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")			255 x 152 x 50 mm (10" x 6.0" x 2.0")	255 x 152 x 59 mm (10" x 6.0" x 2.3")
1.6 kg / 2 kg	0.8 kg			1.6 kg	2.4 kg
19-12	19-13	19-14	19-15	19-16	19-17

Embedded Automation Computer Selection Guide

Model Name		UNO-2173A/AF	UNO-2176	UNO-2182	UNO-3072L
CPU	Celeron M 1.5 GHz Pentium M 1.6 GHz	Atom 1.6 GHz (N270)	Celeron M 1.0 GHz Pentium M 1.4 GHz	Core 2 Duo 1.5 GHz	Celeron M 1.0 GHz Celeron M 1.5 GHz
Onboard RAM	1 GB DDR2 SDRAM	1GB/2GB DDR2 SDRAM	512 MB DDR SDRAM	1 GB DDR2 SDRAM	512 MB/1 GB DDR SDRAM
Battery-Backup RAM	512 KB	- (1MB reserved for project)	512 KB	512 KB	-
Display	DVI-I	VGA	VGA	DVI-I	VGA
Audio	Yes	UNO-2173AF: N/A UNO-2173AF: Yes, 5.1 channel HD audio	-	Yes	-
Serial Ports	2 x RS-232, 2 x RS-232/422/485	UNO-2173A: 2 x RS-232 UNO-2173AF: 2 x RS-232, 1 x RS-422/485	2 x RS-232, 4 x Isolated RS-232/422/485	2 x RS-232, 2 x RS-232/422/485	2 x RS-232, 2 x RS-232/422/485
Ethernet Ports	2 x 10/100/1000Base-T	UNO-2173A: 1 x 10/100/1000 Base-T UNO-2173AF: 2 x 10/100/1000 Base-T	2 x 10/100Base-T	2 x 10/100/1000Base-T	2 x 10/100Base-T
USB Ports	Two	UNO-2173A : Two UNO-2173AF : Four	Two	Two	Four
PC Card Slots	One	-	-	One	-
Printer Ports	-	- (Pin-head reserved for project)		-	
PC/104 Expansion	PCI-104	-	PC/104	PCI-104	-
PCIe/PCI Expansion	-	1 x PCIe mini card slot	-	-	2 x PCI
Onboard I/O	-	-	8-ch Isolated DI 8-ch Isolated DO	-	4-ch isolated DI, 4-ch isolated DO
Watchdog Timer	Yes	Yes			
CompactFlash Slots	One internal	One external	One internal	One internal	One internal
2.5" HDD Expansion	Yes	Yes			
Operating Systems	Windows XP Embedded, Windows 2000/XP, Windows 7	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows XP, Windows 7 Linux, Moblin	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	Windows XP Embedded, Windows 2000/XP, Windows7	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux
Mounting	Wall	Wall	Wall		Wall/Panel/Stand
Anti-Vibration	2 G w/CF, 1 G w/HDD	5 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD		
Anti-Shock	20 G w/HDD, 50 G w/CF	20 G w/HDD, 50 G w/CF	20 G w/HDD, 50 G w/CF		
Power Input Range	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}		16 ~ 36 V_{DC}
Operating Temperature	-20 ~ 50° C (-4 ~ 122° F)	-20 ~ 70° C	-20 ~ 65° C (-4 ~ 149° F)	-20 ~ 60° C (-4 ~ 140° F)	-20 ~ 60° C (-4 ~ 140° F)
Power Consumption Typical	45 W	15 W	24 W	35 W	24 W
Power Requirement	48 W, +24 V @ 2 A power input	36 W, +24 V @ 1.5 A power input	48 W, +24 V @ 2 A power input		
Dimensions (W x D x H)	255 x 152 x 69 mm (10" x 6.0" x 2.7")	255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 69 mm (10" x 6.0" x 2.7")	140 x 237 x 179 mm/ 153 x 237 x 179 mm (5.5" x 9.3" x 7.0"/ 6" x 9.3" x 7.0")
Weight	3 kg	2.5 kg	2.4 kg	3 kg	4.2 kg/6 kg
Page	19-18	19-19	19-20	19-21	19-22

UNO-3072	UNO-3074	UNO-3072LA	UNO-3082/3084	UNO-3272/3282	UNO-4672	UNO-4678
Pentium M 1.4 GHz	Pentium M 1.8 GHz	Atom 1.6 GHz (N270)	Core 2 Duo 1.6 GHz (L7500)	Celeron M 1.86 GHz Core 2 Duo 1.5 GHz	Celeron M 1.0 GHz Pentium M 1.4 GHz	Celeron M 1 GHz
1 GB DDR SDRAM	1 GB DDR SDRAM	1GB DDR2 SDRAM	2GB DDR2 SDRAM	1 GB DDR2 SDRAM	1 GB DDR2 SDRAM	512 MB DDR SDRAM
512 KB		-	512 KB	512 KB		-
VGA		DVI-I	Dual DVI-I support up to 3 display	VGA+ DVI-D	VGA	VGA
-	-	Yes, 5.1 channel HD Audio line out	Yes, 5.1 channel HD Audio line out	Yes	-	-
2 x RS-232, 2 x RS-232/422/485		2 x RS-232/422/485 2 x RS-232 (pin header)	2 x RS-232/422/485 2 x RS-232 (pin header)	2 x RS-232, 2 x RS-232/422/485	2 x Isolation RS-232, 8 x Isolated RS-232/422/485	2 x isolated RS-232, 6 x isolated RS-232/422/485
2 x 10/100Base-T		2 x 10/100/1000 Base-T, support teaming function	2 x 10/100/1000 Base-T, support teaming function	2 x 10/100/ 1000Base-T	2 x 10/100/1000Base-T 4 x 10/100Base-T	3 x 10/100Base-T
Four		Five (One internal), two extra on pin header	Five (One internal), two extra on pin header	Five (One internal)	Four (one internal)	Two
One		-	-	-	-	-
-		- (Pin-head reserved for project)	- (Pin-head reserved for project)			
-		-	-	-	PC/104+	PC/104
2 x PCI	4 x PCI	2 x PCI	2 x PCI (UNO-3082)/ 3 x PCI + 1 x PCIe (UNO-3084)	2 x PCI (UNO-3272)/ 1 x PCI + 1 x PCIe (UNO-3282)	-	-
4-ch isolated DI, 4-ch isolated DO		-	Isolated 4-ch DI, 4-ch DO, Dual type B IEEE 1394	-	8-ch Isolated DI 8-ch Isolated DO	-
Yes		Yes	Yes			
One internal, One external		One external, One internal	One external, One internal	One internal, One external	Two internal	One internal
Yes		One eSATA x 1	Two, support RAID 0/1, eSATA x 1	Two, support RAID 0/1		
Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux		Windows XP Embedded, WES Windows CE 6.0 Windows XP, Windows 7	Windows XP Embedded, WES Windows CE 6.0 Windows XP, Windows 7	Windows XP Embedded, Windows 2000/XP/Vista, Linux, Windows 7	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	Windows XP Embedded, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux
Wall/Panel/Stand		Wall/Stand/Panel	Wall/Stand/Panel	Wall/Stand	Rack Mount	Rack Mount
2 G w/CF, 1 G w/HDD		2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD			
20 G w/HDD, 50 G w/CF		50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD	20 G w/HDD 50 G w/CF	20 G w/HDD 50 G w/CF	20 G w/HDD 50 G w/CF
16 ~ 36 V_{DC}	20 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	AC : 90 ~ 250 V_{AC} DC : 106 ~ 250 V_{DC}	9 ~ 36 V_{DC}
-20 ~ 55° C (-4 ~ 131° F)		-10 ~ 60° C (14 ~ 140° F)	-10 ~ 55° C (14 ~ 131° F)	UNO-3282 -20 ~ 60° C (-4 ~ 140° F) UNO-3272 -20 ~ 50° C (-4 ~ 122° F)	-20 ~ 55° C (-4 ~ 131° F)	-10 ~ 55° C (14 ~ 131° F)
		20 W	40 W	40 W	45 W	24 W (typical)
48 W, +24 V @ 2 A power input	96 W, +24 V @ 4 A power input	36 W, +24 V @ 1.5 A power input	96 W, +24 V @ 4 A power input	120 W +24 V @ 5 A power input	90-250 V_{AC} 47-400 Hz 1.6-0.8 A or 106-250 V_{DC} 1.6-0.8A	48 W +24 V @ 2 A power input
140 x 237 x 179 mm (5.5" x 9.3" x 7.0")	180 x 237 x 177 mm/ 193 x 237x 177 mm (7.1" x 9.3" x 7.0"/ 7.6" x 9.3" x 7.0")	157 x 238 x 177mm (6.2"x 9.3"x 7")	157 x 238 x 177 mm (6.2"x 9.3"x 7") (UNO-3082) 195 x 238 x 177mm (7.6"x 9.3"x 7") (UNO-3084)	200 x 240 x 130 mm (7.9" x 9.4" x 5")	440 x 220 x 88 mm (17.3" x 8.6" x 3.4")	440 x 220 x 44 mm (17.3" x 8.6" x 1.7")
4.4 kg	7.0 kg	4.5 kg	4.5 kg (UNO-3082) 5 kg (UNO-3084)	5.5 kg	6.0 kg	3.6 kg
19-23	19-23	19-24	19-25	19-26	19-27	19-28

UNO-1019

Marvell® XScale® DIN-rail PC with 2 x LAN, 4 x COM, 2 x DI, 2 x DO

Features

- Marvell® XScale® PXA-255 200 MHz Processor
- 64 MB SDRAM on board, 32 MB Flash
- 2 x RS-232, 2 x RS-232/422/485 Serial Ports
- Dual 10/100 Mbps Ethernet
- 1 x CompactFlash® for DATA storage
- Windows® CE 5.0 Ready Platform and optional uClinux OS support
- Included Advantech DaigAnywhere for Easy Configuration
- DIN-rail and Wallmounting Options
- Onboard system & I/O LED indicators
- Supports Microsoft .NET compact framework 2.0 (WinCE 5.0 only)
- Fanless and no internal cabling design

Introduction

Advantech's UNO-1019 is a RISC-grade embedded platform that offers 2 LANs, 4 serial ports and 4 Digital Inputs/Outputs and a CompactFlash slot. UNO-1019 also comes with Windows CE 4.2/5.0 OS, offering a pre-built image onboard. Additionally, UNO-1019 operates under 0 ~ 70° C, and its small size and lightweight design allows it to be installed in tight industrial environments. UNO-1019 is an excellent communication gateway for converting communication protocosl, I/O control, and data storage in the industrial field.

Specifications

General

- **Certifications** CE, FCC Class A
- **Dimensions (W x H x D)** 46 x 162 x 126 mm (1.8" x 6.4" x 5")
- **Enclosure** ABS+PC with solid mounting hardware
- **Mounting** DIN-rail, wallmount
- **Power Consumption** 8.5 W
- **Power Input** 10 ~ 30 V_{DC} (13 W), AT
- **Weight** 400 g

System Hardware

- **CPU** 32-bit Marvell XScale PXA255 200 MHz
- **Memory** Onboard 64 MB SDRAM
- **Indicators** Power, Serial (Tx, Rx), 3 x User Defined LEDs
- **Storage** Onboard 16 or 32 MB Flash Memory
  SSD: 1 x external type I/II CompactFlash® slot
- **Other** Realtime clock, Watchdog timer

System Software

- **Operating System** WinCE 4.2 for UNO-1019ACE-A1E
  WinCE 5.0 for UNO-1019ACE-A2E
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE

Communications

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors, Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 300 ~ 115.2 kbps
  RS-422/485: 300 ~ 115.2 kbps (Max)
- **LAN** 2 x 10/100 Base-T RJ-45 ports

Digital Input/Digital Output

- **Digital Inputs** 2 x Digital Inputs
  Dry contact
  Logic level 0: Open
  Logic level 1: Close
  Wet contact
  Logic level 0: +3 V max
  Logic level 1: +10 V_{DC} to 30 V_{DC}
- **Digital Outputs** 2 x Digital Outputs
  Open Collect to 30 V
  200 mA max Load, power dissipation 450 mW

Environment

- **Operating Temperature** 0 ~ 70° C (32 ~ 158° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **UNO-1019ACE-A1E** XScale DIN-rail PC w/ 16MB Flash Memory
- **UNO-1019ACE-A2E** XScale DIN-rail PC w/ 32MB Flash Memory
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-1140/F

486SX-grade SoC DIN-rail PC with 1 x LAN, 8 x Isolated COM

Features

- Onboard Advantech EVA-4150 486SX SoC
- Four isolated RS-232/485 and four isolated RS-485 ports with automatic flow control for UNO-1140F; Four RS-232/485 ports for UNO-1140
- Industrial-grade serial port design without data loss
- One 10/100 Base-T RJ-45 port
- Two USB 2.0 ports and one internal CompactFlash®
- Compact size, small footprint, saves space
- Front-accessible I/O and DIN-rail design for easy installation in control cabinet
- Wide operating temperature range up to 75° C
- Windows® CE 5.0, DOS, and Linux ready solution
- Onboard system & I/O LED indicators
- Fanless design with no internal cabling
- Grounding isolation between chassis and system
- IP40 ingress protection

Introduction

UNO-1140/F is an DIN-rail mounted, which provides several serial communication ports and Ethernet interfaces. With a compact size, small foot print and front accessible I/Os, UNO-1140/F is very convenient for wiring and DIN-rail installation in the control cabinet. The wide operation temperature support and industrial serial port design makes UNO-1140/F a perfect communication gateway even in critical environments. With OS and driver support on WinCE, Linux, users can integrate applications easily with an application ready platform that can provide a versatile function to fulfill diverse requirements.

Specifications

General

- **Certifications** CE, FCC Class A, UL, CCC
- **Dimensions (W x H x D)** 71 x 155 x 140 mm (2.8" x 6.1" x 5.9")
- **Enclosure** Aluminum + SECC
- **Mounting** DIN-rail, Wallmount
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 10 W (Typical)
- **Power Requirement** 9 ~ 36 V_{DC} (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 1 kg
- **OS Support** DOS (for UNO-1140 only), Windows CE 5.0, Linux
- **System Design** Fanless design with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE

System Hardware

- **CPU** Advantech EVA-X4150 SoC,486SX grade, 150MHz
- **Memory** Onboard 64 MB Industrial grade SDRAM
- **Indicators** LEDs for Power, CF, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** CF: 1 x internal type I/II CompactFlash® slot
- **Display** DB15 VGA connector, supports up to 1024 x 768 @ 60 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

Environment

- **Ingress Protection** IP40
- **Operating Temperature** IEC 68 2-2 (with 100% CPU/ I/O loading)
  -20 ~ 75° C (-4 ~ 167° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 50 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 5 Grms @ 5 ~ 500 Hz

I/O Interface

- **Serial Ports** UNO-1140: 4 x RS-232/485 with DB9 connectors, Automatic RS-485 data flow control
  UNO-1140F: 4 x isolated RS-232/485 with DB9 connectors, 4 x isolated RS-485 with screw terminal, Automatic RS-485 data flow control
- **Serial Port Speed**
  COM1~COM4 RS-232 : 50~115.2 kbps
  RS-485 : 50~115.2 kbps
  COM5~8 (UNO-1140F) RS-485 : 300~921.6 kbps (max)
- **Serial Port Protection** 500V_{DC} Isolation Protection (UNO-1140F)
  2000V_{DC} EFT Protection
- **LAN** 1 x 10/100 Base-T RJ-45 port
- **USB** 2 x USB, USB 2.0 compliant

Reserved Functions

- **PC/104 Slot*** PC/104 slot, space supports 2 cards, supports +5 V

***Note:** This function is reserved for projects

Ordering Information

- **UNO-1140-V10E** EVA SoC DIN-rail PC, 64MB RAM, 4 x COM
- **UNO-1140F-V10E** EVA SoC DIN-rail PC, 64MB RAM, 8 x Iso. COM

Accessories

- **UNO-FPM11-BE** UNO-1100 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-1150/E
UNO-1150G/GE

AMD Geode™ GX DIN-rail PC with 2 x LAN, 3 x COM, PCI-104

AMD Geode™ LX DIN-rail PC with 2 x LAN, 3 x COM, PCI-104

Features

- Onboard AMD Geode GX/LX (400/500 MHz) CPU
- One RS-232 and two RS-232/422/485 ports with automatic flow control.
- Two 10/100 Base-T RJ-45 ports
- Two USB, audio and internal CompactFlash®
- Compact size, small foot print, saves space and front accessible for easy wiring
- DIN-rail design for easy installation in field cabinet
- Wide operating temperature range
- Windows® CE 6.0, Windows XP Embedded, and Linux ready solution
- Onboard system & I/O LED indicators
- Fanless desing with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-1150 is an DIN-rail Mounted, which provides several serial communication ports and Ethernet interfaces, with a compact size, small foot print, and help to saves space and its front accessible is very convenient for wiring and DIN-rail design for easy installation in field cabinet. With rich OS and driver supports, such as Windows XP embedded, WinCE 6.0, and even embedded Linux. You can integrate your applications easily with an application ready platform that can provide a versatile function to fulfill diverse requirements.

Specifications

General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** 81 x 155 x 140 mm (3.1" x 6.1" x 5.6") (UNO-1150)
  109 x 155 x 140 mm (4.3" x 6.1" x 5.6") (UNO-1150E)
  71 x 155 x 140 mm (2.8" x 6.1" x 5.6") (UNO-1150G)
  97 x 155 x 140 mm (3.8" x 6.1" x 5.6") (UNO-1150GE)
- **Enclosure** Aluminum + SECC
- **Mounting** DIN-rail, Wallmount
- **Power Consumption** 15 W (Typical)
- **Power Requirement** 9 ~ 36 V_{DC} (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 1.6 KG (for UNO-1150)
  2.0 KG (for UNO-1150E)
- **OS Support** WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0/6.0, Linux
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** UNO-1150/E: AMD Geode GX 533 (400 MHz)
  UNO-1150G/GE: AMD Geode LX 800 (500MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for Power, IDE, LAN (Active, Status) and Serial (Tx, Rx)
  Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: 2.5" SATA HDD bracket (UNO-1150E/GE)
- **PC/104 Slot** 2x PCI-104 slot, supports 3.3 V & +5 V
  (Only for UNO-1150E/1150GE, one PCI-104 left while using HDD)
- **Mini PCI** 1x MiniPCI (UNO-1150E/GE only)
- **Display** DB15 VGA connector, supports up to 1024 x 768 @ 60 Hz
- **Audio** Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 1 x RS-232, 2 x RS-232/422/485 with DB9 connectors, Automatic RS-485 data flow control
  RS-232/422/485 ports support hardware 128 byte FIFO
- **Serial Port Speed** RS-232 port: 50 ~ 115.2 kbps
  RS-232/422/485 port: RS-232, 300 ~ 115.2 kbps
  RS-232/422/485 port: RS-422/485, 300 ~ 921.6 kbps (Max)
- **LAN** 2 x 10/100 Base-T RJ-45 ports
- **USB** 2 x USB, OpenHCI, Rev. 1.1 compliant

Environment

- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
  -10 ~ 60° C (14 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
  (Only for UNO-1150E/GE)
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz
  HDD: 1Grms@ 5 ~ 500 Hz (UNO-1150E/GE)

Ordering Information

- **UNO-1150-G20E** GX 400 MHz, 256 MB RAM DIN-rail PC
- **UNO-1150E-G20E** GX 400 MHz, 256 MB, DIN-rail PC w/PCI-104
- **UNO-1150G-G30E** LX 500 MHz, 256 MB DIN-rail PC
- **UNO-1150GE-G30E** LX 500 MHz, 256 MB DIN-rail PC w/PCI-104

Accessories

- **UNO-FPM11-BE** UNO-1100 Series VESA Mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility
- **UNO-ANT11-AE** Antenna kit for UNO-1100 Series

UNO-1170/E

Intel® Pentium® M/Celeron® M DIN-rail PC with 2 x LAN, 3 x COM, 4 x USB, PC/104+

Features

- Onboard Celeron® M 1.0 GHz or Pentium® M 1.4 GHz
- Onboard 512 KB battery-backup SRAM
- Onboard system & I/O LED indicators
- Two RS-232 and one RS-232/422/485 ports with automatic flow control
- Two 10/100 Base-T RJ-45 ports
- 3 x external USB and 1 x internal USB for dongle and flash drive
- PC/104+ expansion slots option
- DIN-rail design for easy installation in field cabinet
- Windows® CE 6.0, Windows XP Embedded, and Linux ready solution
- Supports boot from LAN function
- Fanless design with no internal cabling
- One internal USB for dongle and flash drive
- Isolation between chassis and power ground

Introduction

UNO-1170(E) is an DIN-rail, which provides several serial communication ports and Ethernet interfaces, with a compact size, small foot print, and help to saves space and its front accessible is very convenient for wiring and DIN-rail design for easy installation in field cabinet. With rich OS and driver supports, such as Windows XP embedded, WinCE 6.0, and even embedded Linux. You can integrate your applications easily with an application ready platform that can provide a versatile function to fulfill diverse requirements.

Specifications

General

Certification	CE, FCC Class A, UL, CCC
Dimension (W x H x D)	85 x 155 x 140 mm (3.4" x 6.1" x 5.6") (UNO-1170) 109 x 155 x 140 mm (4.3" x 6.1" x 5.6") (UNO-1170E)
Enclosure	Aluminum + SECC
Mounting	DIN-rail, Wallmount
Power Consumption	24 W (Typical)
Power Requirement	10 ~ 36 V_{DC} (e.g +24 V @ 2 A) (Min. 48 W), AT
Weight	1.6 KG (for UNO-1170) 2.0 KG (for UNO-1170E)
OS Support	WES Windows XP embedded, Windows 2000 & XP, Windows CE 5.0/6.0, Linux, QNX
System Design	Fanless with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

CPU	Pentium M 1.4 GHz, Celeron M 1.0 GHz
Memory	512 MB/1 GB DDR SDRAM built-in
Battery Backup SRAM	512 KB
Indicators	LEDs for Power, IDE, LAN (Active, Status), Serial (Tx, Rx), Alarm for battery backup SRAM and diagnosis (programmable) Buzzer for Diagnosis (programmable)
Keyboard/Mouse	1 x PS/2
Storage	SSD: 1 x internal type I/II CompactFlash slot HDD: one 2.5" SATA HDD bracket (Only for UNO-1170E)
PC/104 Slot	2x PC/104+ slot, supports 3.3 V & +5 V (Only for UNO-117E, one PC/104+ left while using HDD)
Mini PCI	1x MiniPCI (UNO-1170E only)
Display	DB15 VGA connector, 1600 x 1200 @ 85 Hz
Audio	Line in, Line out
Watchdog Timer	Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

Serial Ports	2 x RS-232, 1 x RS-232/422/485 with DB9 connectors, Automatic RS-485 data flow control
Serial Port Speed	RS-232: 50 ~ 115.2 kbps RS-422/485: 50 ~ 921.6 kbps (Max)
LAN	2 x 10/100 Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
USB	4 x USB, EHCI, Rev. 2.0 compliant (1 is for USB dongle and USB flash inside chassis)

Environment

Operating Temperature	(IEC 60068-2-2, 100% CPU/ I/O loading) -10 ~ 60° C (14 ~ 140° F)
Storage Temperature	-20 ~ 80° C (-4 ~ 176° F)
Operating Humidity	20 ~ 95% (non-condensing)
Storage Humidity	0 ~ 95% (non-condensing)
Shock Protection	IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms (Only for UNO-1170E)
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash®: 5 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz (Only for UNO-1170E)

Ordering Information

UNO-1170-C11E	Celeron M 1 GHz, 512 MB RAM DIN-rail PC
UNO-1170-C12E	Celeron M 1 GHz, 1 GB RAM DIN-rail PC
UNO-1170E-C11E	Celeron M 1 GHz, 512 MB, DIN-rail PC w/PC/104+
UNO-1170-P12E	Pentium M 1.4 GHz, 1 GB RAM DIN-rail PC
UNO-1170E-P12E	Pentium M 1.4 GHz, 1 GB, DIN-rail PC w/PC/104+

Accessories

UNO-FPM11-BE	UNO-1100 series VESA mount kit
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility
UNO-ANT11-AE	Antenna kit for UNO-1100 Series

UNO-1171A/AE

Intel® Atom™ DIN-rail PC with 3 x LAN, 2 x COM, DVI-I, Mini-PCIe, PC/104+

Features

- Onboard Intel® Atom™ 1.6 GHz
- Onboard 1 MB battery-backup SRAM
- Onboard system & I/O LED indicators
- system diagnosis through led and digital output, remote power control through digital input
- Two RS-232/422/485 ports with automatic flow control
- Three 10/100/1000 Base-T RJ-45 ports with teaming function support
- 4 x external USB
- PC/104+ expansion slots option
- 1 x Mini-PCIe slot for WLAN card and Fieldbus card
- Windows 7, Windows CE, XP Embedded and Linux support
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-1171A and UNO-1171AE are Intel Atom DIN-rail PCs which featured innovated system diagnosis feature for automation application. It provide alarms include over temperature, over voltage, battery power fail, power status on both system onboard LED and Digital output. It also include remote power control through digital input line. These system diagnosis feature enable user to control and monitor system status remotely. It also provided three Gigabit Ethernet interfaces with teaming function support, allow user to uplink two ports with data transmit fault tolerance and downlink one port to field device. With a very compact size, small foot print, front accessible I/Os convenient for wiring and DIN-rail designs for easy installation in field cabinets.

Specifications

General

Certification	CE, FCC Class A, UL, CCC
Dimension (W x H x D)	85 x 155 x 140 mm (3.4" x 6.1" x 5.6") (UNO-1171A) 111 x 155 x 140 mm (4.4" x 6.1" x 5.6") (UNO-1171AE)
Enclosure	Aluminum + SECC
Mounting	DIN-rail, Wallmount
Power Consumption	24 W (Typical)
Power Requirement	9 ~ 36 V_{DC} (e.g +24 V @ 2 A) (Min. 48 W), AT/ATX power mode by Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
Weight	1.6 KG (for UNO-1171A) 2.0 KG (for UNO-1171AE)
OS Support	WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0/6.0, Linux, QNX
System Design	Fanless design with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

CPU	Intel Atom 1.6 GHz (N270)
Memory	1GB DDR2 SDRAM built-in
Battery Backup SRAM	1 MB
Indicators	System:LEDs for Power, CF, LAN (Active, Status), Serial (Tx, Rx), Diagnosis /Alarm: over system temperature, over voltage, alarm for battery backup SRAM, alarm for RTC battery,Programmable(while disable Serial Tx&Rx), Buzzer for Diagnosis (programmable)
Keyboard/Mouse	1 x PS/2
Storage	SSD: 1 x internal type I/II CompactFlash slot HDD: one 2.5" SATA HDD bracket (UNO-1171AE)
PC/104 Slot	2x PC/104+ slot, supports 3.3 V & +5 V (Only for UNO-1171AE, one PC/104+ left while using HDD)
Mini PCI	1x MiniPCI (UNO-1171AE only)
Display	Single DVI-I display (DVI-D + VGA independent)
Audio	5.1 channel HD Audio, Mic in, Line in, Line out
Watchdog Timer	Programmable 256 levels timer interval, from 1 to 255 sec
Mini-PCIe	1x PCI express mini card slot

I/O Interface

Serial Ports	2 x RS-232/422/485 with DB9 connectors,Automatic RS-485 data flow control 2x RS-232 (Optional, pin header)
Serial Port Speed	RS-232: 50 ~ 115.2 kbps RS-422/485: 50 ~ 921.6 kbps (Max)
LAN	3 x 10/100/1000 Base-T RJ-45 ports (supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
USB	4 x USB, EHCI, Rev. 2.0 compliant
Digital Inputs	8-ch wet contact - Logic 0: 0 ~ 3 V_{DC} ; Logic 1: 10 ~ 50 V_{DC} - 2,000 V_{DC} isolation - 2,000 V_{DC} ESD protection - 70 V_{DC} over-voltage protection - ±50 V_{DC} input range and 10 kHz speed - Interrupt handling speed: 10 kHz
Digital Outputs	8-ch DO- 2,000 V_{DC} isolation and 200 mA max/channel sink current - Keep output status after system hot reset - 5 ~ 40 V_{DC} output range and 10 kHz speed
System Diagnoses	Output: over system temperature, over voltage, battery power fail, power status Input: Power On/Off, Reset

Environment

Operating Temperature	(IEC 60068-2-2, 100% CPU/ I/O loading) -10 ~ 65° C (-4 ~ 149° F)
Storage Temperature	-20 ~ 80° C (-4 ~ 176° F)
Operating Humidity	20 ~ 95% (non-condensing)
Storage Humidity	0 ~ 95% (non-condensing)
Shock Protection	IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms (Only for UNO-1171AE)
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash: 2 Grms @ 5 ~ 500 Hz, HDD: 0.5 Grms @ 5 ~ 500 Hz (Only for UNO-1171AE)

Ordering Information

UNO-1171A-A12E	Atom 1.6 GHz, 1GB RAM DIN-rail PC
UNO-1171AE-A12E	Atom 1.6 GHz, 1GB RAM DIN-rail PC w/ PC/104+

Accessories

UNO-FPM11-BE	UNO-1100 Series VESA Mount Kit
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility

UNO-2050E

AMD Geode™ GX Automation Computer with 2 x LAN, 4 x COM, 8 x DI, 8 x DO

Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- Two RS-232 and two isolated RS-232/422/485 with automatic flow control
- Two 10/100 Base-T RJ-45 ports
- 8-ch Isolated DI and 8-ch Isolated DO with counter and timer
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2050E is an X86-grade platform with dual LAN and 16-channel isolated digital I/O and timer/counter. In addition, it also provides two RS-232 and two isolated RS-232/422/485 communication ports with RS-485 automatic flow control functionality. Therefore, the UNO-2050E is an ideal solution for embedded controllers.

UNO-2050E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations. To expand storage capability, the UNO-2050E allows the addition of an external 2.5" HDD using Advantech's HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration (1G w/HDD) is maintained even with the mechanical HDD inside. UNO-2050E is the perfect embedded application ready platform that can shorten development time and offer a rich networking interface to fulfill diverse application requirements.

Specifications

General

- **Certifications**: CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)**: 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure**: Aluminum
- **Mounting**: Wallmount, DIN-rail
- **Industrial Groundin**: Isolation between chassis and power ground
- **Power Consumption**: 15 W (Typical)
- **Power Requirements**: 9 ~ 36 V_{DC} (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight**: 0.8 kg
- **OS Support**: WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux, QNX
- **System Design**: Fanless design with no internal cabling
- **Remote Management**: Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU**: AMD Geode GX533 (400 MHz)
- **Memory**: Onboard 256 MB DDR SDRAM
- **Indicators**: LEDs for Power, IDE, Diagnosis (programmable) and LAN (Active, Status)
  Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse**: 1 x PS/2
- **Storage**: SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Optional)
- **Display**: DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Watchdog Timer**: Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Counter/Timer**: 2 x 16-bit: counter source: DI6 & DI7, Pulse output: DO6 & DO7. Can be cascaded as one 32-bit counter/timer, Down counting, preset counting value, interrupt handling, Timer time base: 100/10/1 kHz,100 Hz
- **Digital Inputs**: 8 ch. wet contact 2,000 V_{DC} isolation, 2,000 V_{DC} ESD protection, 70 V_{DC} over-voltage protection
  0 ~ 50 V_{DC} input range and 10 kHz speed; Interrupt handling
- **Digital Outputs**: 8 ch. 2,000 V_{DC} isolation and 200 mA max/channel sink current. Keeps output status after system hot reset.
  5 ~ 40 V_{DC} output range and 10 kHz speed
- **LAN**: 2 x 10/100Base-T with RJ-45 port
- **Serial Ports**: 2 x standard RS-232 (COM1/COM2)
  2 x isolated RS-232/422/485 (COM3/COM4)
  Automatic RS-485 data flow control
  RS-232/422/485 (COM3/COM4) with 2000 V_{DC} EFT protection & 2000 V_{DC} isolation
- **Serial Port Speed**: RS-232: 50 ~ 115.2 kbps (COM1/COM2)
  50 ~ 230.4 kbps (COM3/COM4)
  RS-422/485: 50 ~ 921.6 kbps (Max.)

Environment

- **Humidity**: 95% @ 40° C (non-condensing)
- **Operating Temperature**: (IEC 60068-2-2, 100% CPU/ I/O loading)
  -10 ~ 55° (14 ~ 131° F)
- **Shock Protection**: IEC 68 2-27
  CompactFlash: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection**: IEC 68 2-6
  CompactFlash: 2 Grms @ sine, 5 ~ 500 Hz,
  1 Oct./min, 1hr/axis.
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 1 Oct./min, 1hr/axis.

Ordering Information

- **UNO-2050E-IDA0E**: GX2 400 MHz, 256 MB RAM Automation Computer

Accessories

- **UNO-HD20-AE**: UNO-2000 HDD expansion kit
- **UNO-FPM21-AE**: UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10**: Advantech Remote Monitoring & Diagnosis Utility

UNO-2053E

AMD Geode™ GX Automation Computer with 2 x LAN, 2 x COM, Audio, PC Card

Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- Two standard RS-232 and one DB-15 VGA connector
- Two 10/100Base-T RJ-45 ports
- Two USB and one type I/II PC card slot
- Audio with Mic in, Line in, Line out
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

The Advantech UNO-2053E is a X86-grade platform that offers dual LAN, dual USB and PC card interfaces to fulfill user's diverse communication needs. In addition, it also offers two RS-232 communication ports on board. Therefore, the UNO-2053E is an ideal solution for data gateway applications. UNO-2053E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations. To expand storage capability, the UNO-2053E allows the addition of an external 2.5" HDD using Advantech's UNO HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration is maintained even with the mechanical HDD inside. (1 G)

UNO-2053E is a perfect embedded application-ready platform that can shorten your development time and offer a rich networking interface to fulfill diverse requirements.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure** Aluminum
- **Mounting** Wallmount, DIN-rail
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 15 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 0.8 kg
- **OS Support** WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** AMD Geode GX533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Option)
- **Display** DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Audio** Mic in, Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **LAN** 2 x 10/100Base-T RJ-45 ports
- **PC Card** 1 x PC Card slot
  Supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) Card
  Supports +5 V, +3.3 V and +12 V @ 120 mA working power
- **Serial Ports** 2 x standard RS-232
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
- **USB Ports** 2 x USB ports, USB OpenHCI, Rev. 1.1 compliant

Environment

- **Humidity** 95 % @ 40°C (non-condensing)
- **Ingress Protection** IP40
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
  -10 ~ 55° C (14 ~ 131° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection** IEC 68 2-6
  CompactFlash: 2 Grms @ sine, 5 ~ 500 Hz,
  10 ct./min, 1hr/axis
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 10 ct./min, 1hr/axis

Ordering Information

- **UNO-2053E-IDA0E** GX2 400 MHz, 256 MB RAM Automation Computer

Accessories

- **UNO-HD20-AE** UNO-2000 HDD expansion kit
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2059E

AMD Geode™ GX Automation Computer with 4 x COM, LAN, PC Card

Features

- Onboard AMD Geode GX533 (400 MHz) CPU
- 2 x RS-232/485, 2 x RS-232/422/485 with automatic flow control
- 1 x 10/100Base-T RJ-45 port
- 2 x USB ports and 1 x type I/II PC card
- One programmable diagnostic LED and buzzer
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

Advantech's UNO-2059E is an X86-grade platform that offers USB and PC card interfaces to fulfill I/O device expansion needs. In addition, it also offers two RS-232/485 and two RS-232/422/485 communication ports with automatic flow control functionality. The UNO-2059E is an ideal compact solution for large computing and communication requirements.

UNO-2059E is available with a pre-configured Windows CE image with optimized onboard device drivers. Microsoft Windows CE is a compact, highly efficient, real-time operating system designed for embedded systems without mechanical HDD limitations. To expand storage capability, the UNO-2059E allows the addition of an external 2.5" HDD using Advantech's HDD expansion kit. It can be used for large data backup requirements and popular OS installations such as Microsoft Windows and Linux OS. Significant anti-vibration (1G w/HDD) is maintained even with the mechanical HDD inside.

Specifications

General

- **Certifications** CE, FCC class A
- **Dimensions (W x D x H)** 188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")
- **Enclosure** Aluminum
- **Mounting** Wallmount, DIN-rail
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 15 W (typical)
- **Power Requirements** 10 ~ 48 V_{DC} (e.g +24 V @ 1 A) (Min. 24 W), AT
- **Weight** 0.8 kg
- **OS Support** WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0 & 6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** AMD Geode GX533 (400 MHz)
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for power, IDE, diagnosis (programmable) and LAN (Active, Status)
  Buzzer for diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: expansion kit for 2.5" IDE HDD (Option)
- **Display** DB15 VGA connector, 1024 x 768 @ 60 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 2 x RS-232/485, 2 x RS-232/422/485
  - Automatic RS-485 data flow control
  - RS-422/485 surge protection up to 2,000 V_{DC}
- **Serial Port Speed** RS-232: 50 ~ 230.4 kbps;
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **USB Ports** 2 x USB ports, OpenHCI, Rev. 1.1 compliant
- **LAN** 1 x 10/100Base-T RJ-45 port
- **PC Card** 1 x PC card slot
  Supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) Card
  Supports +5 V, +3.3 V and 12 V @ 120 mA Power

Environment

- **Humidity** 95 % @ 40° C (non-condensing)
- **Ingress Protection** IP40
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
  -10 ~ 55° C (14 ~ 131° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash®: 20 G @ DIN, half sine, 11 ms,
  50 G @ Wall/Panel, half sine, 11 ms
- **Vibration Protection** IEC 68 2-6
  CompactFlash®: 2 Grms @ sine, 5 ~ 500 Hz,
  1 Oct./min, 1hr/axis.
  HDD: 1 Grms @ sine, 12 ~ 300 Hz, 1 Oct./min,
  1 hr/axis.

Ordering Information

- **UNO-2059E-IDA0E** GX2 400 MHz, 256 MB RAM Automation Computer

Accessories

- **UNO-HD20-AE** UNO-200 HDD expansion kit
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2170

Intel® Celeron® M Automation Computer with 2 x LAN, 4 x COM, PC/104

Features

- Onboard Celeron® M 600 MHz or Celeron M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and two RS-232/422/485 ports with automatic flow control
- Two 10/100Base-T RJ-45 ports
- Two USB and one type I/II PC card
- PC/104 expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded, and Linux ready solution
- Onboard system status LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2170 is an Automation Computer that supports PC/104 expansion, serial communication ports and several other networking interfaces. UNO-2170 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 50 mm (10" x 6.0" x 2.0")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 24 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g +24 V @ 2 A) (Min. 48 W), AT
- **Weight** 1.6 kg
- **OS Support** WES Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** Celeron M 600 MHz, Celeron M 1.0 GHz
- **Memory** 256 MB/512 MB DDR SDRAM built-in
- **Battery Backup SRAM** 512 KB
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card
  Supports +5, +3.3 and +12 V @ 120 mA working power
- **PC/104 Slot** 2 x PC/104 slots (optional). Supports +5 V power
- **Printer Port** 1 x printer port
- **Storage** SSD: 1 x internal type I/II CompactFlash® slot
  HDD: Build-in one 2.5" SATA HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100 Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
  -20 ~ 50° C (-4 ~ 122° F) @ 5 ~ 85% RH.
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz,
  HDD: 0.5 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-2170-C00BE** Celeron M 600 MHz Automation Computer
- **UNO-2170-C11BE** Celeron M 1 GHz Automation Computer

Accessories

- **UNO-PCM21-AE** 2 x PC/104 expansion kit for UNO-2170
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2171

Intel® Pentium® M/Celeron® M Automation Computer with 2 x LAN, 4 x COM, PC/104+

Features

- Onboard Pentium® M 1.4 GHz or Celeron® M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and two RS-232/422/485 ports with automatic flow control
- Two 10/100Base-T RJ-45 ports
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PC/104+ expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Onboard system status LED indicators
- Supports Wake on LAN and Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2171 is an embedded automation computer that supports PC/104+ expansion, serial communication ports and several other networking interfaces. UNO-2171 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 24 W (Typical)
- **Power Requirements** 10 ~ 53 V_{DC} (e.g +24 V @ 2 A) (Min. 48 W), ATX
- **Weight** 2.4 kg (Typical)
- **OS Support** WES Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** Pentium M 1.4 GHz, Celeron M 1.0 GHz
- **Memory** 512 MB/1 GB DDR SDRAM built-in
- **Battery Backup SRAM** 512 KB
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card Supports +5 V, +3.3 V
- **PC/104 Slot** PC/104+ slot, Supports +5 & 3.3 V Power
- **Storage** SSD: 2 x internal type I/II CompactFlash® slot HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Audio** Mic in, Line in, Line out
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100Base-T RJ-45 ports (supports wake on LAN and built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading) -20 ~ 65° C (-4 ~149° F) @ 5 ~ 85% RH
- **Shock Protection** IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash: 2 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-2171-C11BE** Celeron M 1 GHz, 512 MB RAM Automation Computer
- **UNO-2171-P12BE** Pentium M 1.4 GHz, 1 GB RAM Automation Computer

Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2172

Intel® Pentium® M/Celeron® M Automation Computer with 2 x GbE, 4 x COM, DVI

Features

- Onboard Pentium® M 1.6 GHz, Celeron® M 1.5 GHz or Celeron M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- 2 x RS-232 and two RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000 Base-T Ethernet ports
- DVI-I supports dual display
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PCI-104 expansion
- Windows® XP Embedded SP2 ready solution
- Supports SATA-1 HDD and external SATA 1.0 devices
- Onboard system status LED indicators
- Supports wake on LAN and boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2172 is a high-performance Pentium grade controller that supports PCI-104 expansion, serial communication ports and several other networking interfaces. UNO-2172 supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

Specifications

General

Certifications	CE, FCC class A, UL, CCC
Dimensions (W x D x H)	255 x 152 x 69 mm (10" x 6.0" x 2.7")
Enclosure	Aluminum
Mounting	Wallmount
Industrial Grounding	Isolation between chassis and power ground
Power Consumption	45 W (Typical)
Power Requirements	Min. 48 W (9 ~ 36 V_{DC}) (e.g +24 V @ 2 A), ATX
Weight	3 kg
OS Support	WES Windows XP Embedded, Windows 2000/XP, Linux, QNX
System Design	Fanless with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

CPU	Pentium M 1.6 GHz, Celeron M 1.5 GHz
Memory	1 GB DDR2 SDRAM built-in
Indicators	LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
Battery Backup SRAM	512 KB
Keyboard/Mouse	1 x PS/2
PC Card	1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card Supports +5 V, +3.3 V
PC/104 Slot	PCI-104 slot, supports +5 & 3.3 V Power
Storage	SSD: 1 x internal type I/II CompactFlash® slot HDD: Build-in one 2.5" SATA/IDE HDD bracket
Display	DVI-I supports DVI and VGA for dual display
Audio	Mic in, Line in, Line out
SATA	1 x internal, 1 x external SATA 1.0
Watchdog Timer	Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

Serial Ports	2 x RS-232, 2 x RS-232/422/485 with DB9 connectors Automatic RS-485 data flow control
Serial Port Speed	RS-232: 50 ~ 115.2 kbps RS-422/485: 50 ~ 921.6 kbps (Max.)
LAN	2 x 10/100/1000 Base-T Ethernet (supports wake on LAN and built-in boot ROM in flash BIOS) RJ45 ports
USB Ports	2 x USB, EHCI, Rev. 2.0 compliant

Environment

Humidity	95% @ 40° C (non-condensing)
Operating Temperature	(IEC 60068-2-2, 100% CPU/ I/O loading) -20 ~ 50° C (-4 ~ 122° F) @ 5 ~ 85% RH. (for UNO-2172-C22E and UNO-2172-P22E) -20 ~ 60° C (-4 ~ 131° F) @ 5 ~ 85% RH. (for UNO-2172-C11E)
Shock Protection	IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash: 2 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

UNO-2172-C22E	Celeron M 1.5 GHz, 1 GB RAM Automation Computer
UNO-2172-P22E	Pentium M 1.6 GHz, 1 GB RAM Automation Computer

Accessories

UNO-PCM22-AE	2 x PC/104 expansion kit for UNO-2100 series
UNO-FPM21-AE	UNO-2000 series VESA mount kit
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility

UNO-2173A/AF

Intel® Atom™ Automation Computer with 2 x LAN, 3 x COM, Mini-PCIe

Features

- Onboard Intel® Atom™ N270 1.6 GHz processor
- 2 x 10/100/1000 Base-T RJ-45 port
- 4 x USB 2.0 ports
- Windows® CE 5.0 & 6.0, Windows XP Embedded, and Linux ready solution
- Onboard system status LED indicators
- Front-accessible CF slot
- Supports Boot from LAN function
- 1 x Mini-PCIe slot for WLAN card
- Fanless design with no internal cabling
- Isolation between chassis and power ground
- Supports wide operating temperatures from -20° C to 70° C
- IP40 ingress protection
- Windows 7 and Moblin supported

Introduction

UNO-2173A and UNO-2173AF are Embedded Automation Computers equipped with Intel® Atom™ 1.6 GHz CPUs, Gigabit Ethernet ports, rich I/O, and 1 x Mini PCIe socket. They also feature WLAN, 3G expansion and compatibility with Windows 7 and Moblin (Mobile Linux distributed by Intel). Both products have Energy Star certification, IP40 anti-dust ingress protection and wide operating temperatures (-20 ~ 70° C), providing high performance and high versatility with low power consumption. The UNO-2173A and UNO-2173AF are economic new computing platforms for manufacturing executing systems, facility automation, in-vehicle, and industrial thin client applications.

Specifications

General

- **Certifications** Energy Star, CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Enclosure** Aluminum +SECC
- **Mounting** Wallmount, DIN-rail, VESA
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 15 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g +24 V @ 1.5 A) (Min. 36 W), ATX
- **Weight** 2.5 kg
- **OS Support** WES Windows XP Embedded, Windows XP, Windows 7, Windows CE 5.0 & 6.0, Linux, Moblin, QNX
- **System Design** Fanless design with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** Intel Atom 1.6 GHz (N270)
- **Memory** 1 GB, 2 GB DDR2 SDRAM built-in
- **Indicators** LEDs for Power, CF, LAN (Active, Status), Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** CF: 1 x front-accessible type I/II CompactFlash® slot
HDD: 1 x built-in 2.5" SATA HDD/SSD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
LVDS with backlight control (UNO-2173AF only)
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec
- **Expansion Slot** 1 x Mini-PCIe

I/O Interface

- **Serial Ports** UNO-2173A: 2 x RS-232
UNO-2173AF: 2 x RS-232, 1 x RS-422/485
- **Serial Port Speed** 50 ~ 115.2 kbps
- **LAN** 2 x 10/100/1000 Base-T RJ-45 port (Built-in boot ROM in flash BIOS) (One LAN port in UNO-2173A)
- **USB Ports** 4 x USB 2.0 (2 ports on UNO-2173A only)
- **Audio** 5.1 channel HD audio (UNO-2173AF only)

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** IEC 60068-2-2 with 100% CPU/ I/O loading
- -20 ~ 70° C (-4 ~ 158° F)
- **Ingress Protection** IP40
- **Shock Protection** IEC 68 2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash: 5 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz

Reserved Functions

- **Battery Backup SRAM*** 1MB
- **Printer Port*** 1 x printer port pin head
- **USB*** 1x internal pin head

***Note:** This function is optional for project request

Ordering Information

- **UNO-2173A-A12E** Atom 1.6 GHz, 1 GB RAM, Automation Computer w/ front I/O
- **UNO-2173A-A13E** Atom 1.6 GHz, 2 GB RAM, Automation Computer w/ front I/O
- **UNO-2173AF-A12E** Atom 1.6 GHz, 1 GB RAM, Automation Computer
- **UNO-2173AF-A13E** Atom 1.6 GHz, 2 GB RAM, Automation Computer

Accessories

- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **968EMW0021** PCIe mini-card for WLAN
- **1960032715N040** Rear panel of UNO-2173A for Antenna
- **1960032715N020** Rear panel of UNO-2173AF for Antenna
- **1700001854** SMA/I-PEX cable 11CM
- **1750003222** 5dBi Dipole Antenna
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2176

Intel® Pentium® M/Celeron® M Automation Computer with 2 x LAN, 6 x COM, 8 x DI, 8 x DO

Features

- Onboard Pentium® M 1.4 GHz/Celeron® M 1.0 GHz
- Onboard 512 KB battery-backup SRAM
- Two RS-232 and four isolated RS-232/422/485 ports with automatic flow control
- 8-ch Isolated DI and 8-ch Isolated DO with counter and timer
- Two 10/100Base-T RJ-45 ports
- Two USB ports
- PC/104 expansion slots
- Windows® CE 5.0 & 6.0, Windows XP Embedded SP2, and Linux ready solution
- Onboard system status LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2176 is an embedded automation computer that supports PC/104 expansion, serial communication ports and several other networking interfaces. UNO-2176 supports Windows XP Embedded OS and Windows CE 5.0 & 6.0, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

Specifications

General

- **Certification**: CE, FCC Class A, UL, CCC
- **Dimension (W x D x H)**: 255 x 152 x 59 mm (10" x 6.0" x 2.36")
- **Enclosure**: Aluminum
- **Mounting**: Wallmount
- **Industrial Grounding**: Isolation between chassis and power ground
- **Power Consumption**: 24 W (Typical)
- **Power Requirements**: 9 ~ 36 V_{DC} (e.g +24 V @ 2 A) (Min. 48 W), AT
- **Weight**: 2.4 kg
- **OS Support**: WES Windows XP Embedded, Windows 2000/XP, Windows CE 5.0 & 6.0, Linux, QNX
- **System Design**: Fanless with no internal cabling
- **Remote Management**: Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- **CPU**: Pentium M 1.4 GHz, Celeron M 1.0 GHz
- **Memory**: 512 MB DDR SDRAM built-in
- **Battery Backup SRAM**: 512 KB
- **Indicators**: LEDs for Power, IDE, Alarm for battery backup SRAM, Diagnosis (programmable), LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse**: 1 x PS/2
- **PC/104 Slot**: PC/104 Supports +5V Power
- **Storage**: SSD: 1 x internal type I/II CompactFlash® slot
HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display**: DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Watchdog Timer**: Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports**: 2 x RS-232
2 x isolated RS-232/422/485 with DB9 connectors
2 x isolated RS-232/422/485 with 5-pin screw terminal
Automatic RS-485 data flow control
Isolation protection: 2,000 V_{DC}
EFT protection: 2,000 V_{DC}
- **Serial Port Speed**: (COM1, COM2) RS-232: 50 ~ 115.2 kbps,
(COM3-COM6) RS-232: 300 ~ 115.2 kbps
RS-422/485: 300 ~ 921.6 kbps (Max.)
- **LAN**: 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **USB**: 2 x USB, EHCI, Rev. 2.0 compliant
- **Digital Inputs**: 8-ch wet contact
- Logic 0: 0 ~ 3 V_{DC} ; Logic 1: 10 ~ 50 V_{DC}
- 2,000 V_{DC} isolation
- 2,000 V_{DC} ESD protection
- 70 V_{DC} over-voltage protection
- ±50 V_{DC} input range and 10 kHz speed
- Interrupt handling speed: 10 kHz
- **Digital Outputs**: 8-ch DO
- 2,000 V_{DC} isolation and 200 mA max/channel sink current
- Keep output status after system hot reset
- 5 ~ 40 V_{DC} output range and 10 kHz speed
- **Timer/Counter**: Timer/Counter
- Counter source: DI1 & DI3, Pulse output: DO2 & DO3
- Can be cascaded as one 32-bit counter/timer
- Down counting, preset counting value
- Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

- **Humidity**: 95% @ 40° C (non-condensing)
- **Operating Temperature**: (IEC 60068-2-2, 100% CPU/ I/O loading)
UNO-2176-C11E: -20 ~ 65° C (-4 ~ 149° F) @ 5 ~ 85% RH
UNO-2176-P11E: -20 ~ 60° C (-4 ~ 140° F) @ 5 ~ 85% RH
- **Operating Humidity**: 20 ~ 95% (non-condensing)
- **Shock Protection**: IEC 68 2-27
CompactFlash®: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection**: IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-2176-C11BE**: Celeron M 1 GHz, 512 MB RAM Automation Computer

Accessories

- **UNO-PCM22-AE**: 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE**: UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10**: Advantech Remote Monitoring & Diagnosis Utility

UNO-2182

Intel® Core ™2 Duo Automation Computer with 2 x GbE, 4 x COM, DVI

Features

- Onboard Core™ 2 Duo 1.5 GHz (L7400)
- Onboard 512 KB battery-backup SRAM
- 2 x RS-232 and two RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000 Base-T Ethernet
- DVI-I supports dual display
- Audio with Mic in, Line in, Line out
- Two USB and one type I/II PC card
- PCI-104 expansion
- Windows® XP Embedded SP2 ready solution
- Supports one SATA HDD and one external eSATA devices
- Onboard system status LED indicators
- Supports wake on LAN and boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-2182 is a high-performance Core 2 Duo grade controller that supports PCI-104 expansion, serial communication ports and several other networking interfaces. UNO-2182 supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows XP Embedded and speed up your system development with an application ready platform that can provide a rich networking interface to fulfill diverse requirements.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 255 x 152 x 69 mm (10" x 6.0" x 2.7")
- **Enclosure** Aluminum
- **Mounting** Wallmount
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 35 W (Typical)
- **Power Requirements** Min. 48 W (9 ~ 36 V_{DC}) (e.g +24 V @ 2 A), ATX
- **Weight** 3 kg
- **OS Support** WES Windows XP Embedded, Windows 2000/XP/ Vista, Windows 7, Linux
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- **CPU** Core 2 Duo L7400 1.5 GHz
- **Memory** 1 GB DDR2 SDRAM built-in
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Battery Backup SRAM** 512 KB
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC Card slot, supports CardBus (Card-32) Card and 16-bit (PCMCIA 2.1/JEIDA4.2) card Supports +5 V, +3.3 V
- **PC/104 Slot** PCI-104 slot, supports +5 & 3.3V power
- **Storage** SSD: 1 x external type I/II CompactFlash® slot HDD: Build-in one 2.5" SATA/IDE HDD bracket
- **Display** DVI-I supports DVI and VGA for dual display
- **Audio** Mic in, Line in, Line out
- **SATA** 1 x internal, 1 x external SATA 1.0
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps RS-422/485: 50 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100/1000 Base-T RJ45 ports (supports wake on LAN and built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading) -20 ~ 60° C (-4 ~ 140° F) @ 5 ~ 85% RH.
- **Shock Protection** IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash: 2 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-2182-D12E** Core 2 Duo 1.5 GHz, 1 GB RAM Automation Computer
- **UNO2182D127003E-T** Core 2 Duo 1.5GHz, 2GB RAM, w/ -10~50° C Operation Temperature

Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-3072L

Intel® Celeron® M Automation Computer with 2 x PCI Slots

Features

- Onboard Celeron® M processor
- Two RS-232 & two RS-232/422/485 ports with RS-485 automatic flow control
- Two 10/100Base-T RJ-45 ports and four USB 2.0 ports
- Two PCI-bus expansion slots for versatile applications
- Industrial proven design; anti-shock up to 50 G, anti-vibration up to 2 G
- 4-ch isolated DI, 4-ch isolated DO with timer, counter and interrupt handling
- Supports dual power inputs
- Windows® 2000/XP and Embedded Linux support
- Windows XP (SP2) Embedded Ready Platforms with write protection (EWF)
- Onboard system & I/O LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 140 x 237 x 179 mm (5.5" x 9.3" x 7.0", for UNO-3072L-C11BE)
  153 x 237 x 179 mm (6" x 9.3" x 7.0", for UNO-3072L-C22BE)
- **Enclosure** Aluminum
- **Mounting (Option)** Wall/Panel/Stand
- **Power Consumption** 24 W (typical, no PCI cards)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g. +24 V @ 2 A) (Max. 5A), AT (16 ~ 36 V_{DC} for 12 V PCI boards)
- **Weight (Net)** 4.2 kg/6 kg (UNO-3072L-C11BE/UNO-3072L-C22BE)
- **OS Support** WES Windows XP embedded, Windows 2000/XP, Windows CE 5.0/6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- **CPU** Celeron M 1.0/1.5 GHz
- **Memory** 512 MB/1 GB DDR SDRAM built-in
- **Expansion Slots** 2 x PCI V 2.2
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **Indicators** LEDs for power, power input 1, power input 2, power fault, IDE, diagnosis, Programmable buzzer
- **Keyboard/Mouse** 1 x PS/2
- **PCI Slot Power** 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
  (total combined power consumption on the PCI slots should be less than 30W)
- **Storage**
- **SSD** 1 x internal type I/II CompactFlash® slot
  HDD Built-in one 2.5" SATA/IDE HDD Bracket
- **Display** DB15 VGA connector, support to CRT mode: 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

I/O Interface

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 bps ~ 115.2 kbps
  RS-422/485: 50 bps ~ 921.6 kbps (Max.)
- **USB Ports** 4 x USB, USB EHCI, Rev. 2.0 compliant
- **Digital Inputs (4-ch. wet contact DI0 ~ DI3)**
  - 2,000 V_{DC} isolation
  - 50 ~ 70 V_{DC} over-voltage protection
  - ±50 V_{DC} input range and 10 kHz speed
  - Interrupt handling speed: 10 kHz
- **Digital Outputs (4 ch. DO0 ~ DO3)**
  - 2,000 V_{DC} isolation and 200 mA max/channel sink current
  - Keep output status after system hot reset
  - 0 ~ 40 V_{DC} output range and 10 kHz speed
- **Counters/Timers (2 x 16-bit)**
  - Counter source: DI1 & DI3, Pulse output: DO2 & DO3
  - Can be cascaded as one 32-bit counter/timer
  - Down counting, preset counting value
  - Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (with CF card)** (IEC 60068-2-2, 100% CPU/ I/O loading)
  UNO-3072L-C22BE: -20 ~ 55° C (-4 ~ 131° F)
  UNO-3072L-C11BE: -20 ~ 60° C (-4 ~ 140° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-3072L-C11BE** Celeron M 1.0 GHz, 512 MB Automation Computer
- **UNO-3072L-C22BE** Celeron M 1.5 GHz, 1 GB Automation Computer
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-3072/3074

Intel® Pentium® M Automation Computer with 2/4 x PCI, PC Card

Features

- Onboard Pentium® M processor
- Onboard 512 KB battery-backup SRAM
- Two RS-232 & two RS-232/422/485 ports with RS-485 automatic flow control
- Two 10/100Base-T RJ-45 ports and four USB 2.0 ports
- Two/ Four PCI-bus expansion slots for versatile applications
- Industrial proven design; anti-shock up to 50 G, anti-vibration up to 2 G
- 4-ch isolated DI, 4-ch isolated DO with timer, counter and interrupt handling
- Supports dual power inputs
- Windows® 2000/XP and Embedded Linux support
- Windows XP (SP2) Embedded ready platforms with write protection (EWF)
- Onboard system & I/O LED indicators
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 140 x 237 x 179 mm (5.5" x 9.3" x 7.0" for UNO-3072)
  193 x 237 x 179 mm (7.6" x 9.3" x 7.0" for UNO-3074)
- **Enclosure** Aluminum
- **Mounting (Option)** Wall/Panel/Stand
- **Power Consumption** 24 W (typical, no PCI cards)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g. +24 V @ 2 A) (Max. 5A),
  AT. (16 ~ 36 V_{DC} for 12 V PCI boards)
- **Weight (Net)** 4.4 kg for UNO-3072-P11E
  7.0 kg for UNO-3074-P32E
- **OS Support** WES, Windows XP embedded, Windows 2000/XP, Windows CE 5.0/6.0, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- **CPU** Pentium M 1.4/1.8 GHz
- **Memory** 1 GB DDR SDRAM built-in
- **Battery Backup SRAM** 512 KB
- **Expansion Slots** 2/4 x PCI V 2.2
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **Indicators** LEDs for power, power input 1, power input 2, power fault, IDE, diagnosis, 4 COM ports Tx/Rx, and Alarm for battery backup.
  Programmable buzzer.
- **Keyboard/Mouse** 1 x PS/2
- **PC Card** 1 x PC card slot, supports CardBus (Card-32), and 16-bit (PCMCIA 2.1/JEIDA4.2) card supports +5 V, +3.3 V and +12 V @ 120 mA working power
- **PCI Slot Power** 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
  (total combined power consumption on the PCI slots should be less than 40W)
- **Storage**
  SSD 1 x internal type I/II CompactFlash® slot
  1 x external type I/II CompactFlash slot
  HDD Built-in 2.5" SATA/IDE HDD bracket
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

Communications

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors
  Automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50 bps ~ 115.2 kbps
  RS-422/485: 50 bps ~ 921.6 kbps (Max.)
- **USB Ports** 4 x USB, USB EHCI, Rev. 2.0 compliant
- **Digital Inputs (4-ch. wet contact DI0 ~ DI3)**
  - 2,000 VDC isolation
  - 50 ~ 70 VDC over-voltage protection
  - ±50 VDC input range and 10 kHz speed
  - Interrupt handling speed: 10 kHz
- **Digital Outputs (4 ch. DO0 ~ DO3)**
  - 2,000 VDC isolation and 200 mA max/channel sink current
  - Keep output status after system hot reset
  - 0 ~ 40 VDC output range and 10 kHz speed
- **Counters/Timers (2 x 16-bit)**
  - Counter source: DI1 & DI3, Pulse output: DO2 & DO3
  - Can be cascaded as one 32-bit counter/timer
  - Down counting, preset counting value
  - Timer time base: 100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (with CF card)** (IEC 60068-2-2, 100% CPU/ I/O loading)
  -20 ~ 55° C (-4 ~ 131° F) @ 5 ~ 85% RH
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash: 2 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-3072-P12BE** Pentium M 1.4 GHz, 1 GB RAM Automation Computer
- **UNO-3074-P32BE** Pentium M 1.8 GHz, 1 GB RAM Automation Computer
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-3072LA

Intel® Atom™ Automation Computer with 2 x PCI, 2 x GbE, 2 x COM

Features

- Onboard Atom N270 1.6 GHz processor
- Two RS-232/422/485 ports with automatic flow control
- Two 10/100/1000 Base-T RJ-45 ports with teaming function support
- Two PCI slots for versatile applications
- Windows® 2000/XP/Vista and Embedded Linux support
- Onboard system & I/O LED indicators
- Supports wake on LAN and boot from LAN function
- Supports audio Line-out function
- Fanless design with no internal cables
- Isolation between chassis and power ground
- AT/ATX power mode by jumper selection
- Programmable LEDs
- Front-accessible I/O design
- Wide operating temperature from -10 ~ 60° C
- One internal USB for dongle and flash drive

Introduction

Advantech's UNO-3072LA is an Atom-based Embedded Automation Computer with two PCI slots that provides excellent power consumption capabilities. The Gigabit LAN supports the teaming function with fault tolerance, link aggregation, and load balancing. Different from general industrial PCs, UNO-3072LA is more compact and reliable with a fanless and cableless design. It was designed with an open platform which can fulfill any demanding requirement from the industrial field, and it is an ideal solution for industrial automation and control. UNO-3072LA supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of the Windows operating system in componentized form.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x H x D)** 157 x 238 x 177mm (6.2"x 9.3"x 7")
- **Enclosure** Aluminum + SECC
- **Mounting** Panel / Stand / Wall
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 20 W (Typical)
- **Power Requirement** 9 ~ 36 V_{DC} (e.g +24 V @ 2 A) Min. 48 W, ATX, AT/ ATX power mode by Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
- **Weight** 4.5 kg
- **OS Support** WES, Windows XP Embedded, Windows Vista/XP, Windows 7, Windows CE 6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- **CPU** Intel Atom N270 1.6 GHz
- **Memory** 1GB DDRII SDRAM built-in
- **Expansion Slots** Two PCI V2.2 slots (Note: The heat dissipation from the PCI cards may affect thermal performance)
- **PCI Slot Power** 12 V @ 2A, -12V @ 0.5 A, +5 V @ 4 A, +3.3 V @ 4 A (total combined power consumption on the PCI slots should be less than 20W)
- **Indicators** LEDs for Power, Standby, HDD, SRAM battery, Rx/Tx for COM ports (can be used as programmable LED)
- **Audio** AC 97, Line Out
- **Storage**
  - CF: 1x internal type I/ II CompactFlash slot
    1x external type I/ II CompactFlash slot
  - HDD: Built-in one 2.5" SATA HDD/SSD bracket
    1x external SATA 2.0
- **Display** Single DVI-I display (DVI-D + VGA independent)
- **Watchdog Timer** Programmable 256 level timer interval, from 1~255 sec

I/O Interface

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100/1000 Base-T RJ-45 ports (Intel 82574L, supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
- **Serial Ports** 2 x RS-232/ 422/ 485 with DB9 connectors, automatic RS-485 data flow control, 2 x RS-232 (optional)
- **Serial Speed** RS-232 Speed: 50 bps ~ 115.2 kbps, RS-422/485 Speed: 300 bps ~ 921.6 kbps (Max)
- **USB Ports** 5 x USB 2.0 (one internal), 2 x USB 2.0 pin header
- **Optional I/O** PS/2 KB/MS, 2 x COM-232 (with packing), 2 x USB 2.0, LPT

Environment

- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading) -10 ~ 60° C (14 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Humidity** 95% @ 40° C (non-condensing)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.)
  CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-3072LA-A12E** Intel Atom 1.6 GHz, 1GB RAM Automation Computer
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-3082
UNO-3084

Intel® Core ™2 Duo Automation Computer with Dual DVI, 2 x PCI and Firewire

Intel® Core ™2 Duo Automation Computer with Dual DVI, 1 x PCIe, 3 x PCI and Firewire

Features

- Onboard Core 2 Duo L7500 1.6 GHz processor
- Dual DVI-I to support up to 3 displays
- Dual IEEE-1394 for vision inspection devices
- AT/ATX power mode by jumper selection
- Onboard 512KB Battery- backup SRAM
- Two RS-232/422/485 ports with automatic flow control
- Two 10/100/1000 Base-T RJ-45 ports with teaming function support
- Up to three PCI and one PCIe expansion
- 4-ch isolated DI, 4-ch isolated DO
- Dual SSD/HDD with onboard RAID 0/1 support
- Fanless design with no internal cables
- Isolation between chassis and power ground
- Front-accessible I/O design
- One internal USB for dongle and flash drive

Introduction

Advantech's UNO-3082/3084 are high performance Core 2 Duo Embedded Automation Computers with up to four expansion slots for PCI express or PCI support. The Gigabit LAN on the UNO-3082/3084 supports Teaming function with fault tolerance, link aggregation, and load balance features. It also equipped two IEEE 1394b bilingual interfaces which allow users to connect their own devices for machine vision application. Critical data can be saved in UNO-3082/3084 on the battery backup SRAM. It also support two HDD bays with RAID 0/1.

Specifications

General

Certifications	CE, FCC class A, UL, CCC
Dimensions (W x H x D)	157 x 238 x 177 mm (6.2"x 9.3"x 7") (UNO-3082) 195 x 238 x 177mm (7.6"x 9.3"x 7") (UNO-3084)
Enclosure	Aluminum + SECC
Mounting	Panel / Stand / Wall
Industrial Grounding	Isolation between chassis and power ground
Power Consumption	40 W (Typical, no add-on card)
Power Requirement	9 ~ 36 V_{DC} (e.g +24 V @ 5 A), ATX, AT/ATX power Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
Weight	4.5 kg (UNO-3082); 5 kg (UNO-3084)
OS Support	WES, Windows XP Embedded, Windows Vista/XP, Windows 7, Windows CE 6.0, Linux, QNX
System Design	Fanless with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

CPU	Intel Core 2 Duo L7500 1.6 GHz
Memory	2GB DDRII SDRAM built-in (4GB optional)
Battery Backup SRAM	512 KB
Expansion Slots	Two PCI V2.2 slots (UNO-3082) One PCIex1 plus three PCI v2.2 slots (UNO-3084)
PCI Slot Power	12 V @ 3 A, -12 V @ 0.8 A, +5 V @ 6 A, +3.3 V @ 6 A (total combined power consumption on the PCI slots should be less than 40W)
Indicators	LEDs for Power, Standby, HDD, SRAM battery, Rx/Tx for COM ports
Audio	AC 97, Line Out
Storage	CF: 1x internal type I/ II CompactFlash slot 1x external type I/ II CompactFlash slot HDD: Two built-in 2.5" SATA HDD brackets with support for RAID 0 and RAID 1 One external SATA 2.0 (does not support hot swap)
Display	Dual DVI-D independent, or DVI-D + Dual VGA cloned displays
Watchdog Timer	Programmable 256 level timer interval, from 1~255 sec

I/O Interface

Clock	Battery-backup RTC for time and date
LAN	2 x 10/100/1000 Base-T RJ-45 ports (Intel 82574L, supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
Serial Ports	2 × RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control, 2 x RS-232 (optional)
Serial Speed	RS-232 Speed: 50 bps ~ 115.2 kbps, RS-422/485 Speed: 300 bps ~ 921.6 kbps (Max)
USB Ports	5 x USB 2.0 (one internal), 2 x USB 2.0 pin header
IEEE 1394 (Firewire)	2 x type B (Bilingual)
Optional I/O	PS/2 KB/MS, 2 x COM-232 (with packing), 2 x USB 2.0, LPT
Digital Input	4-ch. contact DI0 ~ DI3
Wet contact:	Logic 0: -3 ~ 3 V_{DC}; Logic 1: ±10 ~ 50 V_{DC}
Dry contact:	Logic 0: open; Logic 1: close to GND
isolation and ESD protect	1500 V_{DC},, 50~70 V_{DC} over voltage protection
Opto-Isolator Response:	25µs- Interrupt capable channel: DI0 ~ DI3
Digital Output	4 ch. DO0 ~ DO3 1,500 V_{DC} isolation, 200 mA max/channel sink current Keeps output status after system hot reset Open collector to 40V (200mA maximum sink current load) and 3 kHz speed

Timer/Counter

Counter Source	DI1 & DI3
Pulse Output	DO2 & DO3
Can be cascaded as one 32-bit counter/timer	
Down counting, preset counting value	
Timer Time Base	100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

Operating Temperature	(IEC 60068-2-2, 100% CPU/ I/O loading) -10 ~ 55° C (14 ~ 131° F)
Storage Temperature	-20 ~ 80° C (-4 ~ 176° F)
Humidity	95% @ 40° C (non-condensing)
Shock Protection	IEC 68 2-27 CompactFlash: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash®: 2 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

UNO-3082-D23E	Core 2 Duo, 2 x PCI Automation Computer
UNO-3084-D23E	Core 2 Duo, 3 x PCI/1 x PCIe Automation Computer
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility
1960048293N000	Top cover of UNO-3082 with venting hole
1960045707N010	Top cover of UNO-3084 with venting hole

UNO-3272/3282

Intel® Core ™2 Duo/Celeron® M Automation Computer with PCI/PCIe, 2 x GbE, 4 x COM, DVI

Features

- Onboard Core 2 Duo 1.5 GHZ/Celeron M 1.86 GHz processor
- Dual SSD/HDD with on-board RAID 0/1 support
- Onboard 512 KB Battery-backup SRAM
- Optimized thermal design to support -20~60° C operating tempertaure in full CPU and I/O loads
- 2 x RS-232 and 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000 Base-T Ethernet ports with teaming function
- One PCIe plus one PCI or two PCI expansion slots for versatile applications
- Both DVI-D and VGA displays to support dual display output
- Support latest Windows 7 OS
- Onboard system & I/O LED indicators with programmable feature
- Fanless design with no internal cabling
- Isolation between chassis and power ground
- One internal USB for dongle and flash drive

Introduction

Advantech's UNO-3200 series is high-performance Core 2 Duo Automation Computer with two PCI expansion or one PCIe plus PCI slots. UNO-3200 features a rugged design with Gigabit LAN and battery backup SRAM. Different from general industrial PCs, UNO-3200 series is more compact and reliable with a fanless, cableless and diskless design. They are open platforms which can fulfill any demanding requirement from the industrial field, and it is an ideal solution for industrial automation and control. UNO-3200 series provide embedded operating system with a pre-configured image that has optimized onboard device drivers, and supports Windows XP Embedded to fulfill the toughest requirements for complete functionality and high reliability.

Specifications

General

- **Certifications** CE, FCC class A, UL, CCC
- **Dimensions (W x D x H)** 200 x 240 x 130 mm (7.9" x 9.4" x 5")
- **Enclosure** Alumium
- **Mounting** Wall/Desktop
- **Power Consumption** 40 W (Typical, L7400, no add-on card)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g +24 V @ 5 A), ATX
- **Weight** 5.5 kg
- **OS Support** WES, Windows XP Embedded, Windows 2000/XP/ Vista/ Windows 7, Linux, Windows CE 6.0, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/ XPe

System Hardware

- **CPU** Intel Core 2 Duo L7400 1.5 GHz, Celeron M 440 1.86 GHz
- **Memory** 1GB DDR2 SDRAM built-in (optional 2 GB)
- **Battery Backup SRAM** 512 KB
- **Indicators** LED for Power, Power Standby, HDD LED; 4 COM ports Tx/Rx, 2 LAN ports Tx/Rx, 4 user define LED and alarm for BatteryBackup
- **Keyboard/Mouse** 2 x PS/2 connector for Keyboard & Mouse
- **Audio** Line in, Line out
- **Expansion Slots** One PCIe x 1 + one PCI riser board installed, 2xPCI v2.2 riser replacable in accessory (UNO-3282)
  2 x PCI V2.2 riser board included (UNO-3272)
  (Note: The heat dissipation in the PCI cards may affect thermal performance)
- **PCI/PCIe Slot Power** PCI: 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
  PCIe: 12 V @ 2.5 A, +3.3 V @ 3 A
  (total combined power consumption on the PCI slots should be less than 20W)
- **Storage**
  SSD: 1x Internal , 1x External CompactFlash® slot (UNO-3282)
  1 x External type I/II CompactFlash slot (UNO-3272)
  HDD: Two built-in 2.5" SATA HDD brackets support RAID 0/1
- **Display** Supports up to 1600 x 1200 @ 85 Hz
  VGA + DVI-D, support dual display
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

Communication

- **Clock** Battery-backup RTC for time and date
- **LAN** 2 x 10/100/1000 Base-T RJ-45 ports (Intel 82573L chip, supports teaming, Wake On LAN function and built-in boot ROM in flash BIOS)
- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control
- **Serial Port Speed** RS-232: 50bps ~ 115.2 kbps
  RS-422/485: 50bps ~ 921.6 kbps (Max)
- **USB** 5 x USB, USB EHCI, Rev. 2.0 compliant (1 is for USB dongle and USB flash inside chassis, UNO-3282 only)

Environment

- **Humidity** 95% @ 40° C (non-condensing)
- **Operating Temperature (With CF Card)** UNO-3282-D12E: -20 ~ 60° C (-4 ~ 140° F)
  UNO-3272-C32E: -20 ~ 50° C (-4 ~ 122° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Shock Protection** IEC 68 2-27
  CompactFlash: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection** IEC 68 2-64 (Random 1 Oct./min, 1hr/axis)
  CompactFlash: 5 Grms @ 5 ~ 500 Hz
  HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-3272-C32E** Celeron M 1.86 GHz, 1 GB RAM Automation Computer
- **UNO-3282-D12E** Core 2 Duo 1.5 GHz, 1 GB RAM Automation Computer
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-4672

Intel® Pentium® M/Celeron® M Automation Computer with 6 x LAN, 10 x COM, 8 x DI, 8 x DO, PC/104+

IEC 61850-3 / IEEE 1613 Compliant

Features

- IEC 61850-3 and IEEE 1613 compliant for substation automation applications
- Onboard Celeron M 1 GHz or Pentium M 1.4 GHz processor
- 2 x RS-232 and 8 x RS-232/422/485 isolated serial ports with automatic flow control and 128KB FIFO
- 2 x 10/100/1000 Base-T (supports teaming function) and 4 x 10/100 Base-T
- Supports 2 x internal CF cards and 1 x 2.5" SATA HDD
- PC/104+ extension and 4 x USB 2.0 (1 x internal)
- Rear wiring, rich system & I/O LED status indicators
- Windows® CE 6.0, Windows XP Embedded SP2, and Linux ready solution
- Fanless design with no internal cabling
- Isolation power design with wide AC / DC input range
- Isolation between chassis and power ground
- One internal USB for dongle and flash drive

Introduction

UNO-4672 is compliant with IEC 61850-3 certification which defines the international standards of network and system communications in power substations. Featuring a fanless design with built-in isolated PSU and ten isolated serial communication ports, UNO-4672 is even suitable for any harsh applications. The rear I/O connection and LEDs on front panel for all ports and modes highly simplify monitoring for operation and maintenance.

Specifications

General

Certifications	IEC 61850-3, IEEE 1613, CE, FCC class A, UL, CCC
Dimensions (W x D x H)	2U (440 x 220 x 88) mm (17.3" x 8.6" x 3.4") fits into standard 19 inch rack
Enclosure	SECC
Mounting	2U Rackmount
Power Consumption	45W (Typical)
Power Requirements	AC : 90 ~ 250 V_{AC} (47 ~ 400 Hz) DC : 106 ~ 250 V_{DC} With isolation protection, AT
Weight	6.0 kg
OS Support	WES, Windows® XP Embedded, Windows 2000/XP, Windows CE 6.0, Linux, QNX
System Design	Fanless with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE/ XPe

System Hardware

CPU	Pentium M 1.4 GHz, Celeron M 1.0 GHz
Memory	1 GB DDR DRAM built-in
Indicators	LEDs for Power, IDE, Alarm for battery backup SRAM, Diagnosis (programmable), LAN (Active, Status) and Serial (Tx, Rx)
Storage	
SSD	2x internal type I/II Compact Flash® slots
HDD	Build-in one 2.5" SATA HDD bracket
Display	DB15 VGA connector, 1600 x 1200 @ 85 Hz
PC/104 Slot	PC/104+ supports +3.3 V & +5 V power
Watchdog Timer	Programmable 256 levels timer interval, from 1 to 255 sec
Battery Backup SRAM	512 KB

I/O Interface

Serial Ports	2 x DB-9 RS-232 & 8 x screw terminals with 5-wired RS-232/422/485 Automatic RS-485 data flow control 2000 V_{DC} EFT protection & 2000 V_{DC} isolation
Serial Port Speed	(COM1, COM2) RS-232: 50 ~ 115.2 kbps, (COM3 ~ COM10) RS-232: 50 ~ 230.4 kbps RS-422/485: 50 ~ 921.6 kbps (Max.)
LAN	2 x 10/100/1000 Base-T RJ-45 ports,teaming function supported 4 x 10/100Base-T RJ-45 ports
USB Ports	4 x USB, UHCI, Rev. 2.0 compliant 1 x Front, 2 x Rear and 1 x Internal ports
Digital Inputs	8-ch wet contact Logic 0: 0 ~ 3 V_{DC}; Logic 1: 10 ~ 50 V_{DC} 2,000 V_{DC} isolation, 2,000 V_{DC} ESD protection and 70 V_{DC} over-voltage protection Interrupt handling: IRQ 7 photo couple response: 100 µs
Digital Outputs	8-ch DO 2,000 V_{DC} isolation and 200 mA max/channel sink current Keep output status after system hot reset 5 ~ 40 V_{DC} output range and 10 kHz speed

Timer/Counter

Counter Source	DI1 & DI3
Pulse Output	DO2 & DO3
Can be cascaded as one 32-bit counter/timer	
Down counting, preset counting value	
Timer Time Base	100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

Humidity	95% @ 40° C (non-condensing)
Operating Temperature	IEC 60068-2-2 with 100% CPU/ I/O loading, 48 hrs -20 ~ 65° C (-4 ~ 149° F)
Operating Humidity	20 ~ 95% (non-condensing)
Shock Protection	IEC 68 2-27 CompactFlash®: 50 G half sine, 11 ms HDD: 20 G half sine, 11 ms
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash®: 2 Grms @ 5 ~ 500 Hz, HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

UNO-4672-C12E	Celeron M 1 GHz, 1 GB RAM Automation Computer
UNO-4672-P12E	Pentium M 1.4 GHz, 1 GB RAM Automation Computer
UNO-P168-AE	8-port RS-232/422/485 w/Iso and EFT, PCI-104 for UNO-4672
UNO-P166-AE	6-port RS-232/422/485 w/Iso and EFT, 2-port IRIG-B, PCI-104 for UNO-4672
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility

UNO-4678

Intel® Celeron® M Automation Computer with 3 x LAN, 8 x COM, PC/104

Features

- Onboard Celeron® 1 GHz processor and 512 MB or 1024 MB RAM
- Supports Lm sensor which can retrieve CPU and board temperature for monitoring purposes
- 8 x isolated RS-232/422/485 ports with automatic flow control
- 3 x 10/100Base-T RJ-45 ports
- Supports two USB and 1 x type I/II CF card
- Windows® CE 5.0 and Windows XP Embedded ready solution
- Windows 2000/XP driver ready and Linux driver support
- Windows XP Embedded (SP2) ready platform with write protection (EWF)
- Onboard system & I/O LED indicators
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-4678 is high-performance Automation Computer, which supports a Celeron M 1 GHz CPU, and equipped with eight isolated serial communication ports. They inherit the glory from the UNO family and includes the typical characteristics as it is fanless, robust, and reliable. Furthermore, in order to meet the diverse applications in industrial automation and control, varied interfaces and 1U form factor are suitable for use, especially for rack mounting. Also, LEDs for all ports and modes on the front panel simplify the monitoring status for operation, administration and maintenance. UNO-4678 is convenient and user-friendly platforms to fulfill a wide range of requirements.

Specifications

General

Certifications	CE, FCC class A, UL, CCC
Dimensions (W x D x H)	1U (440 x 220 x 44 mm/17.3" x 8.6" x 1.7") fits into standard 19 inch rack
Enclosure	SECC
Mounting	1U Rackmount
Industrial Grounding	Isolation between chassis and power ground
Power Consumption	24 W (Typical)
Power Requirements	Min. 48 W (9 ~ 36 V_{DC}) (e.g +24 V @ 2 A), AT
Weight	3.6 kg
OS Support	WES, Windows XP Embedded, Windows 2000/XP, Windows CE 5.0, Linux, QNX
System Design	Fanless with no internal cabling
Remote Management	Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

CPU	Celeron M 1.0 GHz
Memory	512 MB DDR SDRAM (UNO-4678-C11E) or
	1024 MB DDR SDRAM (UNO-4678-C12E) built-in
Indicators	LEDs for Power, Power Input 1 & 2, Power fault, IDE, LAN (Active, Status) and Serial (Tx, Rx)
Keyboard/Mouse	1 x PS/2
Storage	
SSD	1 x internal type I/II CompactFlash® slot
HDD	Built-in 2.5" SATA/IDE HDD bracket
Display	DB15 VGA connector 1600 x 1200 @ 85 Hz

I/O Interface

Serial Ports	8 x RS-232/422/485 ports include: - 2 x DB-9 connectors with 9-wired RS-232 - 6 x screw terminals with 5-wired RS-232 Automatic RS-485 data flow control 2000 V_{DC} EFT protection & 2000 V_{DC} isolation
Serial Port Speed	RS-232: 50 ~ 230.4 kbps RS-422/485: 50 ~ 921.6 kbps (Max.)
LAN	3 x 10/100Base-T RJ-45 ports
USB Ports	2 x USB, USB EHCI, Rev. 2.0 compliant

Environment

Humidity	95% @ 40° C (non-condensing)
Operating Temperature	-10 ~ 50° C (14 ~ 122° F)
Shock Protection	IEC 68 2-27 CompactFlash®: 50 G @ wall mount, half sine, 11 ms HDD: 20 G @ wall mount, half sine, 11 ms
Vibration Protection	IEC 68 2-64 (Random 1 Oct./min, 1hr/axis.) CompactFlash®: 2 Grms @ 5 ~ 500 Hz, HDD: 0.5 Grms @ 5 ~ 500 Hz

Ordering Information

UNO-4678-C11E	Celeron M 1 GHz, 512 MB RAM Automation Computer
UNO-4678-C12E	Celeron M 1 GHz, 1024 MB RAM Automation Computer
PCLS-DIAGAW10	Advantech Remote Monitoring & Diagnosis Utility

Accessories

HDD Expansion Kit

UNO-2000 HDD Expansion Kit

- Dimensions: 188.8 x 106.5 x 21.0 mm (W x D x H) (Only extension kit)

Supported Models

- UNO-2050E, UNO-2052E, UNO-2053E, UNO-2059E

Packing List

- Extend chassis, 1 piece 12 cm IDE cable, post for assembly 2.5" HDD

Ordering Information

- **UNO-HD20-AE** UNO-2000 series HDD expansion kit

DIN-rail Expansion Kit

UNO-2100 Series DIN-rail Kit

- Supports DIN-rail mounting (EN50022, 35 mm X 7.5 mm)

Supported Model List

- UNO model All UNO-2100 series

Ordering Information

- **UNO-DIN21-BE** UNO-2100 series DIN-rail Kit

UNO-3000 Mounting Kit

Supported Models **UNO-3072L, UNO-3072, UNO-3074**

Panel Mounting Kit

Ordering Information

- **UNO-PM70-AE** Panel mounting kit for UNO-3000 series

Stand Mounting Kit

Ordering Information

- **UNO-SM70-AE** Stand mounting kit for UNO-3000 series

Wall Mounting Kit

Ordering Information

- **UNO-WM74-AE** Wallmounting kit for UNO-3074-P11E
- **UNO-WM72-AE** Wallmounting kit for UNO-3072L-C11E/ UNO-3072-P11E

Note: For UNO-3074-P32E wall mount requirement, please use UNO-PM70-AE mounted on the back as a wallmount kit

Supported Models **UNO-3072LA, UNO-3082, UNO-3084**

Panel Mounting Kit

Ordering Information

- **UNO-PM80-AE** Panel mounting kit for UNO-3082/UNO-3084

Stand Mounting Kit

Ordering Information

- **UNO-SM80-AE** Stand mounting kit for UNO-3082/UNO-3084

Wall Mounting Kit

Ordering Information

- **UNO-WM84-AE** Wall mounting kit for UNO-3084
- **UNO-WM82-AE** Wall mounting kit for UNO-3082/ UNO-3072LA

VESA Mounting Kit

UNO-2000 Series VESA Mounting Kit

UNO-FPM21 could provide excellent integration of UNO and FPM models which could help installation easier and save more space in filed.

Features

- Dimensions: 271 x 163 x 12 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

Supported Models

UNO	All UNO-2000 series and UNO-2100 series
FPM	All FPM 12", 15", 17", 19" models

Ordering Information

UNO-FPM21-AE	UNO-2000 series VESA mount kit

UNO-1100 Series VESA Mounting Kit

Features

- Dimensions: 271 x 163 x 12 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

Supported Models

UNO	All UNO-1100 series
FPM	All FPM 12", 15", 17", 19" models

Ordering Information

UNO-FPM11-BE	UNO-1100 series VESA mount kit

PC/104 Expansion Kit

UNO-2100 Series PC/104 Expansion Kit

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

Supported Model List

- **UNO-2170**
  This kit includes one solid panel, one "2 x DB-9" panel and one "4 x DB-9" panel

Ordering Information

UNO-PCM21-AE	2 x PC/104 expansion kit for UNO-2170

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

Supported Model List

- **UNO-2171, UNO-2172, UNO-2176, UNO-2182**
  This kit includes one solid panel, one "2 x DB-9" panel and one "4 x DB-9" panel

Ordering Information

UNO-PCM22-AE	2 x PC/104 expansion kit for UNO-2100 series

Power Adapter and Power Cord Solutions

Industrial grade power adapter

Features

- Input voltage: 90 ~ 264 V_{AC}, 47 ~ 63 Hz
- Output Voltage: 24 V_{DC}
- Operating Temperature: -20 ~ 70° C

Note: Need to order power cord separately

Ordering Information

- **1757002321**
  63W AC to DC UNO series power adapter
- **1702002600**
  Power Cable US Plug 1.8 M
- **1702031801**
  Power Cable UK Plug 1.8 M
- **1702002605**
  Power Cable EU Plug 1.8 M
- **1702031836**
  Power Cable China/Australia Plug 1.8 M

Commercial grade power adapter

Features

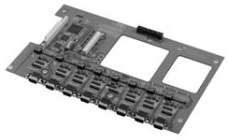
- Input voltage: 100 ~ 240 V_{AC}, 50 ~ 60 Hz
- Output Voltage: 19 V_{DC}
- Operating Temperature: 0 ~ 40° C

Note: Need to order power cord separately

Ordering Information

- **1757000223**
  65W AC to DC power adapter
- **1700001947**
  Power Cable 2-Pin US type 1.8M
- **1700001948**
  Power Cable 2-pin UK type 1.8 M
- **1700001949**
  Power Cable 2-pin EU type 1.8 M

UNO-4672 Expansion Solution



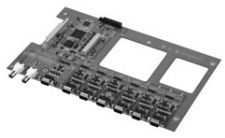
UNO-P168

Specifications

- 8-port RS-232/422/485 (DB-9)
- 2,500 V_{DC} EFT Protection
- 2,500 V_{DC} Isolation Protection
- Baud-rate (bps) : 50 ~ 921.6 k

Ordering Information

UNO-P168-AE	8-port RS-232/422/485 w/Iso and EFT, PCI-104 for UNO-4672



UNO-P166

Specifications

- 6-port RS-232/422/485 (DB-9), 2-port IRIG-B
- 2,500 V_{DC} EFT Protection
- 2,500 V_{DC} Isolation Protection
- Baud-rate (bps) : 50 ~ 921.6 k
- IRIG-B Time Code Input Interface: RS-422/485 (DB9), TTL (BNC-type)

Ordering Information

UNO-P166-AE	6-port RS-232/422/485 w/Iso and EFT, 2-port IRIG-B, PCI-104 for UNO-4672